PERFORMANCE BASED STATEMENT OF WORK

Task Order Title: **User Productivity Enhancement and Training (PET)**
Acquisition Number - 47QFSA18K0111
GSA Task Order ID: ID04180146

DATE: May 6, 2019

GENERAL SERVICES ADMINISTRATION (GSA),
Federal Acquisition Service (FAS), Region 4
Assisted Acquisition Services Division (AASD)
Section 6, Pensacola, FL

GSA Senior Contracting Officer (SCO): Lisa Younghanse 77 Forsyth Street SW Atlanta, GA 30303-3490 (b) (6) Lisa.Younghanse@gsa.gov	GSA Customer Account Manager (CAM): Jim Kiesling 77 Forsyth Street SW Atlanta, GA 30303-3490 (850) 432-5587 Jim.Kiesling@gsa.gov
Client Command: Department of Defense (DoD) High Performance Computing Modernization Program (HPCMP) Information Technology Laboratory 3909 Halls Ferry Road Vicksburg, MS 39180-6199	HPCMP Client Representative: Brandy Ellison 3909 Halls Ferry Road Vicksburg, MS (b) (6) Brandy.M.Ellison@usace.army.mil
Contacting Officer Representative (COR): Lisa R. Harris Desk (601) 634-2980 Blackberry (b) (6) lisa.r.harris@usace.army.mil lisa.r.harris@erdc.dren.mil	Alt. Contracting Officer Representative (ACOR): Ronald Hedgepeth (b) (6) Ronald.A.Hedgepeth@erdc.dren.mil
Contract: TBA	Contractor: TBA
Contractor Rep: TBA Phone: Email:	Contractor Program Manager : TBA Phone: Email:

Period of Performance (POP)

2 Month Transition:	1 July 2019 to 31 Aug 2019
Base Period:	1 Sep 2019 to 30 June 2020
Option Year One:	1 July 2020 to 30 June 2021
Option Year Two:	1 July 2021 to 30 June 2022
Option Year Three:	1 July 2022 to 30 June 2023
Option Year Four:	1 July 2023 to 30 June 2024
Six Month Extension:	1 July 2024 to 31 Dec 2024 (if required)

[X]	Firm Fixed Price	[X]	Severable
[X]	Time and Material	[ ]	Non-Severable (fully funded)
[ ]	Cost Plus Incentive Fee	[ ]	Fully Funded
[X]	Performance Based	[X]	Incrementally Funded

Current Period of Performance: RFQ

Current Task Order Ceiling Amount:

Current Task Order Funded Amount:

Current Amendment or Modification:
Amendment 1 (1 May 2019): Provided clarification to the offerors' questions with changes to the following documents: PWS, ITO, DD254, Pricing Template, Past Performance Questionnaire, and Question and Answers sheet. Changes highlighted in yellow.

Amendment 2 (6 May 2019): Provided clarification to the offerors' questions with changes to the following documents: PWS and ITO, and Question and Answers sheet. Changes highlighted in yellow.

Appendix A: Workload per Year
Appendix B: Mission / Special Project Technical Requirements Form
Appendix C: Mission / Special Project Cost Estimate Template.
Appendix D: Delivery of TTA Support Requirements in terms of CFA Technical Areas
Appendix E: List of Past Modification Actions

1.1 Introduction.

The General Service Administration (GSA), Federal Acquisition Service (FAS), Assisted Acquisition Service Division (AASD) has a procurement request from the Department of Defense (DoD) High Performance Computing Modernization Program (HPCMP) to establish a new task order for the HPCMP Productivity Enhancement and Training (PET) initiative. The PET initiative supports DoD scientists and engineers by enabling them to take full advantage of DoD HPCMP resources in response to executing their mission. PET enhances the capability and productivity of the HPCMP community through training, collaboration, tool and software development, technology transfer, and outreach.

1.2 Background.

The DoD HPCMP is a joint program that serves the Research, Development, Test, and Evaluation (RDT&E) community of the DoD. The HPCMP is managed on behalf of the DoD by the U.S. Army Engineer Research and Development Center (ERDC). The HPCMP is a technology-led, innovation-focused program committed to extending high performance computing (HPC) to address the DoD's most significant challenges in the Science & Technology and Test & Evaluation (S&T and T&E) and Acquisition Engineering communities for new and enhanced defense systems.

The HPCMP addresses its mission challenges through: 1) HPC shared resource centers, where HPC enables the DoD to explore new theories and evaluate them well beyond what is practical using experiment alone; 2) deployment of an information-assured national research and engineering network; 3) and Software Applications that provide scientists and engineers with the capacity to create models and simulations of the physical world which support the design, development, testing, and deployment of superior weapons systems. Software Applications provide tools to support the DoD in the mission-critical areas of S&T, T&E, and AE communities that enable decision making in the DoD.

HPC amplifies the creativity, productivity, and impact of the DoD RDT&E community by enabling access to insight about the physical world, and human actions within it, that would otherwise be too costly, too dangerous, or too time-intensive to obtain thorough observation and experiment alone.

1.3 Objectives.

The objective of this task order is to obtain services which support the HPCMP PET initiative by providing access to computational experts with experience spanning many HPC technical areas. HPC application experts will be available to help HPCMP users become more productive. By using HPCMP resources, the goal of expediting milestones and reducing overall costs related to technological development and application will be realized. The PET initiative also leverages the expertise of academia and industry experts to capitalize from emerging technologies.

1.3.1 User Productivity Enhancement and Training Objectives

Four key outcomes are required to be met by the PET Contractor:

- Work with the HPCMP user community to improve the scaling, portability, accuracy and functionality of user software on a variety of hardware platforms to solve critical problems for the DoD.
- Provide training, both in-person and virtually, on effective usage of software, hardware, networking, data transfer, data storage and visualization of data.
- Maintain and update the online knowledge management system.

- Facilitate and promote the transfer of scientific and technical knowledge between HPCMP users and the broader computational communities, including DoD, other federal agencies, academia, and industry.

The PET Contractor shall supply requisite collaboration across all computational functional areas and all HPCMP user communities to assist the HPCMP in achieving its mission as stated in the Introduction. This effort shall be supplied using methods and metrics that allow quantitative evaluation of results and subjective success stories demonstrating significant impact on DoD programs.

1.4 Period of Performance.

The duration of this task order is a Base Year period of performance with four (4) 1-year options. There will be a two (2) month Transition Period and a ten (10) month Base Year ending on 30 June 2020. The four (4) 1-year option periods, if exercised by the Government, shall begin at option award and end one year thereafter for a maximum basic period of performance of five years. There will be a six (6) month Extension evaluated and exercised if required.

2 Month Transition:	1 July 2019 to 31 Aug 2019
Base Period:	1 Sep 2019 to 30 June 2020
Option Year One:	1 July 2020 to 30 June 2021
Option Year Two:	1 July 2021 to 30 June 2022
Option Year Three:	1 July 2022 to 30 June 2023
Option Year Four:	1 July 2023 to 30 June 2024

Six Month Extension: 1 July 2024 to 31 Dec 2024 (if required)

1.5 Transition.

There will be a two (2) month Transition Period from 1 July 2019 to 31 Aug 2019 prior to the start of the Base Period on 1 Sep 2019. The awarded contractor shall ensure the effective, efficient transfer of responsibility as well as technical data, business processes, hardware, software, tools, test equipment, and spare parts to the Government or another contractor at the end of this task order. The contractor shall provide support throughout the phase-in and phase-out periods to minimize interruptions or delays to work that could impact the mission.

1.5.1 Phase-In.

The contractor shall develop a “Transition-In Plan” to facilitate the accomplishment of a seamless transition from the incumbent contractor who is operating under a previously awarded contract/PWS to the incoming contractor who will become fully responsible effective for the scope of work called for in this task order at the beginning of the POP. This “Transition-In Plan” is due 5 working days after award of this task order.

The incoming contractor shall be responsible, for accomplishing necessary administrative and logistical tasks necessary for the contractor to be fully functional in accordance with this task order effective the start of the period performance. Tasks that the incoming contractor will need to accomplish during the "Transition In" time period include, but are not limited to the following:

- Conduct transition meetings with the Client and the outgoing contractor.
- Provide training on the unique Information Technologies to support the PET mission.
- Take actions necessary to employ all required personnel with appropriate security clearances in time to be fully functional by the start of the Base Period Performance Start Date. See PWS Section 8.12.
- Familiarization with support requirements for the current HPCMP computing environments, networking, and software.
- Prepare/credential/indoctrinate personnel through security and provide network access.
- Provide training on the various HPCMP program processes employed
- Take necessary actions to obtain/produce CAC cards and other documentation necessary to meet contractual requirements.
- Conduct a joint inventory of IT equipment, materials and tools, including software licenses, with the client and the outgoing contractor.

During this transition period, the outgoing contractor will remain fully responsible for the work required by the contract that was awarded to that company. The incoming contractor shall Not Separately Price (NSP) the client/government for any requirements prior to 1 Sep 2019.

1.5.2 Phase-Out.

The contractor shall provide a Transition-Out Plan no later than (NLT) sixty (60) calendar days prior to expiration of this task order. The contractor shall identify how it will coordinate with the incoming contractor and or government personnel to transfer knowledge regarding the following: project management processes, points of contact, location of technical and project management documentation, status of ongoing technical initiatives, appropriate contractor to contractor coordination to ensure a seamless transition, transition of key personnel, identify schedules and milestones, identify actions required of the government, establish and maintain effective communication with the incoming contractor/government personnel for the period of the transition via weekly status meetings. The contractor shall ensure that all outstanding work requests, software, equipment, and Government-owned parts are turned in to the COR during the phase-out period of the task order. During the phase-out period, the contractor shall prepare and deliver a 100 percent accurate update of all inventory assets to the COR at least ten (10) business days before the end of this task order.

Tasks that the out-going contractor will need to accomplish during the "Transition Out" time period include, but are not limited to the following:

- Finalizing deliverables
- Preparing/conducting transition briefings

- Completing Information Assurance scans/documentation
- Conduct security out briefings/programmatic de-briefings
- Conduct network out processing
- Update briefings/documentation on the advanced IT systems and networks supporting the various HPCMP mission entities

During this transition period the outgoing contractor will remain fully responsible for the work required by the task order that was awarded to that company.

NOTE: If the incumbent contractor is awarded this new task order there is no need for a transition between companies. The contractor will not need to have any significant transition time and will remain responsible at all times for performing the requirements found in the applicable task order for the performance periods stated in those task orders. The contractor will still be responsible for the development of a Transition-Out Plan NLT sixty (60) calendar days prior to expiration of this contract.

2.0 Overall Task Scope.

The contractor shall provide the necessary expertise, personnel, equipment, supplies, materials, supervision, and other items and non-personal services to support productivity/performance enhancement of software, technology transfer and training in the use of HPCMP resources, data movement and storage across the Defense Research and Engineering Network (DREN), and aid in optimizing data collection to facilitate visualization of data produced on HPCMP resources. The scope of PET support activities includes all work necessary to plan, provision, execute, and analyze HPC projects across HPCMP user sites. The actual workload may vary significantly among sites as HPC projects vary in type, size, and complexity. The Contractor shall ensure proactive and sustained excellence in providing accurate, safe, secure, timely, efficient, and effective productivity enhancement, technology transfer, and training services to meet the Government's objectives.

3.0 Performance Requirements

Insights into the behavior of complex systems obtained through advanced computational techniques are the ultimate service to an HPCMP customer. External customers include scientists and engineers working on computational solutions to problems of importance to the DoD. Internal customers include the DoD Supercomputing Resource Centers (DSRCs) and those customers requiring software application support within the HPCMP. A customer engages PET support to more effectively use HPCMP resources with the intent to acquire data, information, and knowledge; to assist concept explorations, development, characterization, performance and work flow enhancement, qualification of a system, and to achieve milestones. This PWS element contains the technical support requirements necessary to advance PET services, capabilities, and technologies. It includes the application of emerging techniques, analytical methods, and computational modeling and simulation approaches to solve problems or to generally advance the state-of-the-practice in HPC effectiveness and efficiency. The DoD HPCMP resources are located at the five DSRCs. The DSRCs provide a HPC computational environment, and include a

full range of resources including hardware, software, networking and information-assurance, data storage, archiving, etc.

3.0.1 HPCMP Technical and Functional Areas:

The Technical requirements for this PWS are reflected in the following functional areas:

- **Technical Thrust Areas**
- **Training and Technology Transfer**
- **Outreach**
- **Special Projects**

Within these functional areas, the Contractor will work to effectively support software applications that address current and future HPC technologies. The Contractor shall deliver sustained HPC expertise through an effective human resource framework, and optimally align skills with the work to be performed. Beyond this and to the maximum extent practical, collocating resources at DSRCs gives access to additional HPCMP support resources.

3.1 Technical Thrust Areas (TTAs):

These are concentrated efforts involving multiple members of the PET support team working with HPCMP principal investigators (PIs) and DoD stakeholders to advance new technologies in HPC and to develop and transition mission-relevant S&T to the DoD. The TTAs are designed to advance the state of HPC by setting challenging technical goals and offering innovations that support pioneering, high-risk/high return ideas. The contractor shall promote technology transfer by partnering with other federal organizations, industry, and academia to create new tools and capabilities for the HPCMP Community. TTAs will focus on critical HPC-related technology development that addresses needs expressed by DoD priorities.

3.1.1 TTA Technical Focus: Below is a list of typical TTA areas that shall be supported:

- Cross-cutting Computational Areas: These are HPC-related tasks that are common across DSRCs within the HPCMP, including but not limited to, new delivery methods, emerging hardware exploration, high performance data analytics (HPDA), debugging software, performance improvement on user codes, scalability issues and porting of software to emerging hardware. Examples:
    - High Performance Data Analytics (HPDA): Contractor support in this area will include technical support for HPCMP customer projects that span the range of computational disciplines identified as Computation Functional Areas (CFAs) that require data analytical tools and methods. This shall include development of software to meet customer needs in the area of HPDA, optimization of existing software, data movement and storage solutions.

    - New Delivery Methods: The Contractor shall provide support for current and emerging needs in this rapidly evolving area. Types of new delivery methods may include such areas as the strategic usage of cloud computing resources, and portable HPC resources to support in situ HPC in theatre.
    - Emerging Hardware (HW) Exploration: The Contractor shall actively support evaluation of emerging HW for potential deployment throughout the HPCMP ecosystem.
- Software Refactoring to Optimize Performance on Emerging Computational Platforms: With each HPCMP supercomputer acquisition, new computational platforms are deployed at the HPCMP sites resulting in a need to ensure that critical DoD software can exploit the use of the new technology. In accordance with HPCMP guidance, the Contractor shall work with HPCMP customers to refactor software to maintain operability and to provide performance enhancement for identified codes.
- Programming Environments: General support for programming environments currently supported at HPCMP sites, and future environments that may be required. The Contractor support staff shall be responsible for support of comprehensive programming environments to include, but not be limited to compiling, debugging, optimizing, profiling, and efficient usage of tools to accomplish these tasks.
- High Performance I/O and Storage: Evaluate, develop, and implement emerging solutions and/or techniques that enhance HPC application I/O performance and optimize data storage.

TTAs will require expertise in a variety of computational domain areas to include, but not be limited to computational fluid dynamics (CFD); computational structural mechanics (CSM); computational biology, chemistry, and materials science (CCM); computational electromagnetics and acoustics (CEA); climate/weather/ocean modeling and simulation (CWO); signal/image processing (SIP); forces modeling and simulation (FMS); computational electronics, networking, and systems (ENS); command, control, communications, computers, and intelligence (C4I); environmental quality modeling and simulation (EQM); integrated modeling and test environments (IMT); space and astrophysical sciences (SAS); and data and decision analytics (DDA). This group of computational disciplines will be collectively referred to as CFAs. Appendix E provides the scope and representative supporting software for CFAs.

3.1.1.1 General Requirements for Support for Productivity Enhancements for Software Applications Support crosscutting CFAs:

The Contractor shall develop, enhance, maintain, and apply software support for the purpose of: Advancing the state of tools, of algorithms, and of standards for generalized run-time, preprocessing, and post-processing analysis on datasets, including those that may push the limits of current technology; data mining and knowledge discovery, grid generation, problem-solving environments, and computational techniques and methods for intelligent extraction of useful information from data. This includes:

- Employing best processes and practices known to reduce cost, schedule, and performance risk.
- Ascertaining requirements to assist users in the development, enhancement, implementation, and execution of codes for customers of HPCMP resources.
- Ascertaining requirements to assist users in code Profiling, Performance Prediction, Optimization, and Porting, where PET personnel:
    - Scan, review, and enhance application codes running on the DSRCs.
    - Develop strategies to identify the best practices for code performance analysis and prediction, and porting/migrating to new architectures.
    - Interface with users and developers of the application codes to improve code efficiency.
- Participating in software systems design and development based on sound systems engineering principles and processes, to include:
    - Recommending architectural-based software systems that support open-system concepts, exploit commercial off-the-shelf (COTS) software applications products and university-based software applications products, and allow incremental improvements based on modular, reusable, extensible software;
    - Recommending Government and commercial software reuse opportunities before developing new software;
    - Recommending selection of programming languages in context of the systems and software engineering factors that influence overall life-cycle costs, risks, and potential for interoperability; and
    - Documenting software measurement processes in planning and tracking the software developed/acquired.

3.1.1.2 Technical Thrust Area Performance Locations:

TTAs shall be comprised of teams of computational experts representing a critical mass of expertise, working together with HPCMP customers, staff and the DSRCs in key areas of support for the HPCMP. The scope of these TTAs will be revisited yearly by the HPCMP to ensure that they align with the current DoD HPCMP priorities.

TTAs will synergize team efforts across HPCMP sites in the areas of data analytics, *in situ* visualization and analysis, parallel I/O, identify needs and define requirements for handling large (100 terabyte+) data sets, mesh generation, parallel and performance analysis tools, code profiling, code optimization, code porting to new architectures, tactical HPC, and other emerging areas.

ERDC DSRC
- Cross-cutting Computational Areas
- Software Refactoring to Optimize Performance for Emerging Architectures

AFRL DSRC
- Cross-cutting Computational Areas
- Programming Environments
- HPCMP-wide Training

- HPCMP-wide Outreach

ARL DSRC
- Cross-cutting Computational Areas

NRL-DC
- Cross-cutting Computational Areas

Navy DSRC
- High Performance I/O and Storage
- Cross-cutting Computational Areas

Maui High Performance Computing Center (MHPCC) – If OPTION is exercised
- Cross-cutting Computational Areas

Over the POP, the Contractor shall review the types of support, site placement, and number of personnel to best meet the emerging needs of the DoD HPCMP and its customers. Any recommended changes must be submitted to the Government and approved by the Government prior to implementation.

3.1.2 HPCMP Mission Projects:

HPCMP Mission Projects (MPs) are typically 1 to 12 month part-time efforts formally requested by HPCMP PIs and addressed by a PET team of computational experts with domain-specific knowledge in science and engineering. PET scientists will advise and assist in developing, applying, and/or using algorithms and in maximizing usage of existing software. Other HPCMP-related activities such as data movement and storage may also be part of MPs. Support for future software development activities that may span more than one year, and for large-capacity projects that require large HPC resources such as the current Frontier Projects (FPs) also fall under this task.

3.1.2.1 Description of Mission Projects:

MPs will be initiated by the HPCMP PET Director. All MPs must be approved by the PET Mission Project Board (MPB) before they can be executed. The following gives guidelines for the range of activities:

- Short-term cooperative software research and development of computational science applications
- Expert advice and assistance in developing, applying, or using algorithms, existing software, or related computational science technology
- Expert advice and assistance in configuring and installing computational software applications, tools, and related data for HPCMP customers in conjunction with DSRC systems team
- Support to the HPCMP in software applications planning

- Ensuring alignment with HPCMP plans, goals and mission objectives
- Coordination of requirements with the HPCMP, as needed
- Conducting studies to perform software engineering design and analysis, as directed
- Developing detailed resource estimates and activity schedules

3.1.2.2 Gathering Requirements for MPs:

During the year, individual requests for support shall be collected from various sources, including direct requests for creation of an MP, the HPC Help Desk, HPCMP User Advisory Group (UAG), or as identified via outreach workshops, meetings, or other venues. MP's will be used by the Government to execute requirements and ensure efforts align with the HPCMP strategic objectives.

3.1.2.3 Mission Project Process:

1. MP request is submitted by Government Sponsor via the enterprise HPCMP ticketing system. The MPB will track and subsequently process all requests.

2. MP request is approved or rejected by MPB.

3. Approved MPs are submitted to the Contractor, in conjunction with the Government sponsor, for MP proposal development.

4. The Contractor submits the MP proposal to the MPB for final evaluation.

5. The Contractor either receives approval to proceed or a request to revise according to the MPB recommendations. If revision is required, the Contractor will, in conjunction with the Government sponsor, iterate with the MPB until agreement is reached.

6. Mission Projects are the way HPCMP will define work at each site, the Labor and Material for Mission Projects will be accounted by the contractor staff and resources at each HPC Location as listed above in PWS Section 3.1.1.2.

3.2 Training and Technology Transfer:

Training of users within HPCMP is required to be cost effective, and span a broad scope of user needs, ranging from basic HPC skills up to advanced topic workshops. Efficient usage of both software and hardware may be topics addressed in training curricula. Software for which training is required may be user-developed software, Government-developed software, Commercial-Off-The-Shelf (COTS) software, or hybrid combinations of these categories.

The HPCMP also utilizes a tool named the Knowledge Management Learning System (KMLS). The Contractor is required to oversee/maintain the content for this system. Current components include HPCMP training, technical documents, and technical communities. New capabilities are being developed which include intelligent enterprise search, system guides, user code repository and development management/collaboration, plus webcasting/webinars functions. The Contractor is required to facilitate the successful implementation of this new functionality.

The Contractor shall also facilitate and promote the transfer of scientific and technical knowledge between HPCMP customers and the broader computational communities, including DoD, other federal agencies, academia, and industry. Tech transfer would be expected when the contractor works on a user problem, then pushes the fix(es) for a specific code to the HPCMP user community. Similarly, if hardware/software improvements are provided by vendors, it would be expected that the contractor would implement/support these improvements.

3.2.1 Training

The PET training program should strive to deliver knowledge to users and leverage and expand that knowledge within the PET team to make it increasingly more effective as the program progresses. Specifically, the Contractor shall:

- Work with HPCMP users to identify needs and define requirements for all customer training,
- Develop course proposals that incorporate the HPCMP training mission.
- Incorporate distance learning as a design methodology to deliver instructional content outside the normal classroom, and use collaboration technology to assist in this delivery.
- Provide an agile training curriculum.
- Organize, support and administer the HPCMP Learning Management System, knowledge management systems and other systems/capabilities necessary to provide modern learning content and materials to HPCMP customers and users.

3.2.2 Performance Location

The contractor shall provide a training program that supports the entire HPCMP; however, the training team proposed shall physically reside at the AFRL DSRC.

3.3 Outreach:

The Contractor shall cultivate and maintain relationships with the HPCMP to improve productivity enhancement, technology transfer, and training for DoD mission impact.

HPCMP-wide Outreach: The Contractor shall implement an Outreach program in the areas of responsibility listed below:

- Provide oversight and coordination of HPCMP events, as requested
- Coordinate and promote technical exchange using various media
- Provide review and input to reports and publications that facilitate technical exchange between the HPCMP and HPC communities
- Develop relationships with DSRCs, laboratories, and PIs to assess their potential HPC needs
- Coordinate and develop a computational science workforce conduit between academia and HPCMP
- Develop a process to introduce new users of HPCMP resources to PET, provide links to information on how to utilize HPCMP resources efficiently including but not limited to HPC system documentation, run scripts, file transfers, performance monitoring software and software debugging tools.

3.3.1 Performance Location

The contractor shall provide an outreach program that supports the entire HPCMP; however, the outreach team proposed shall physically reside at the AFRL DSRC.

3.4 HPCMP Special Projects:

HPCMP Special Projects (SPs) are projects that allow the HPCMP community to fund experts from industry and academia to solve HPCMP- mission related problems that are not directly addressed in other parts of the PET contract. Oversight of SPs is undertaken by the Special Project Board (SPB) which is chaired by the HPCMP Director.

3.4.1 Special Project Process:

1. SP request is submitted by Government Sponsor to the HPCMP PET Government Program Director and presented to the SPB. The SPB will track and subsequently process all requests.
2. SP request is technically approved or rejected by SPB.
3. Approved SPs are submitted to the CO by the COR. The CO will determine if the SP is within Scope of the Task Order and in accordance with (IAW) PWS Sections 8.0.1. & 8.0.2.
4. Upon CO's approval of the SP's Scope, the GSA will request a proposal and implementation plan from the Contractor via the ITSS Request for Quote (RFQ) process.
5. The Contractor submits the SP proposal and implementation plan to the CO. The CO sends the proposal to the PET COR for evaluation, concurrence, and funding.
6. GSA will modify the task order with a unique Technical Directive (TD) number, in accordance with PWS 8.0.1, upon receipt of concurrence and funding from the PET COR. The Contractor will begin the SP upon receipt of the contract modification. Once the modification is funded and approved by GSA, the contractor can begin action on the SP.

4.0 Performance Matrix.

PWS 8.4 Program Management				
Metric Type	**Performance Standard**	**Performance Indicator**	**Acceptable Quality Levels**	**Surveillance Method**
Proactive leadership team - effective PWS integration and results management.	Delivery on proposal initiatives and proposed results; negotiated workload executed within cost and schedule commitments.	Exceptional, Very Good, Good, Satisfactory, Marginal or Unsatisfactory	95% of Mission Projects and Special Project deliverables are completed by deadlines. Information is always accurate. 95% of deliverables are sent to the COR for each project.	Periodic program reviews.
Efficient and effective collaboration, communication, and coordination.	Timely, accurate direction, tracking and reporting of all contract activities and resources - no surprises.	Exceptional, Very Good, Good, Satisfactory, Marginal or Unsatisfactory	95% compliance with Governance Review Process to provide timely, accurate direction, tracking, and reporting of all contract activities and resources.	Periodic status reviews.
Quality customer relations.	Actionable responses to customer issues are identified and actions assigned in a timely manner. Actions are completed by the negotiated deadline.	Exceptional, Very Good, Good, Satisfactory, Marginal or Unsatisfactory	95% of resolutions to customer issues are completed by the deadline. 95% of actions in response to customer issues are logged and assigned within 5 business days of identification.	Periodic program reviews.
Thorough contract administration.	Timely, accurate, and comprehensive contract actions; no deviations of contract terms and conditions.	Exceptional, Very Good, Good, Satisfactory, Marginal or Unsatisfactory	95% compliance with contract terms and conditions. 95% of commitments made on contract actions delivered within the required deadlines.	Review of contract deliverables, status reviews and periodic program reviews.
Effective financial data and reports.	Accurate, timely and consistent with generally accepted accounting principles.	Exceptional, Very Good, Good, Satisfactory, Marginal or Unsatisfactory	95% of financial reports delivered on time. 95% of financial reports will be accurate and consistent with GAAP and CAS.	Review of contract deliverables, status reviews and periodic program reviews.

Responsive staffing.	Fully staffed with highly qualified and technically competent personnel.	Exceptional, Very Good, Good, Satisfactory, Marginal or Unsatisfactory	95% of staffing in accordance with contract requirements 95% of staffing needs addressed within 5 business days. ("Addressed" is when position requirements are defined, candidates are identified, and screening is initiated).	Review of contract deliverables, status reviews and periodic program reviews.
Effective process management.	Tasks are delivered through documented and controlled processes.	Exceptional, Very Good, Good, Satisfactory, Marginal or Unsatisfactory	95% of documented processes will be periodically reviewed for effectiveness. 95% of any identified gaps in documented processes will be addressed through process improvement.	Periodic process and program reviews.
PWS 3.1 Technical Thrust Areas (TTAs)				
Metric Type	**Performance Standard**	**Performance Indicators**	**Acceptable Quality Levels**	**Surveillance Method**
Effective user support in Functional Scientific Applications and Cross-cutting Technology Areas	Actionable support completed in a timely and accurate manner with a favorable customer satisfaction rating	Exceptional, Very Good, Good, Satisfactory, Marginal or Unsatisfactory	95% of actionable support completed accurately by the required deadline.	Periodic reviews
Security	NO security violations for the length of the contract	Exceptional, Very Good, Good, Satisfactory, Marginal or Unsatisfactory	95% compliant with DoD security policies and regulations	Continuous review and validation
PWS 3.2 Training and Technology Transfer				
Metric Type	**Performance Standard**	**Performance Indicator**	**Acceptable Quality Levels**	**Surveillance Method**
Identify, plan and execute stated user training needs	Satisfy a negotiated standard for	Exceptional, Very Good, Good,	95% compliance with documented plan	Periodic reviews

	providing training content on an annual basis based on stated requirements in the Functional Areas.	Satisfactory, Marginal or Unsatisfactory		
Provide for coordinated technology and delivery of instructional material to the PET user , academic and students communities	Execute a negotiated, time-phased plan for each contract year	Exceptional, Very Good, Good, Satisfactory, Marginal or Unsatisfactory	95% compliance with documented plan	Periodic reviews; customer satisfaction survey

PWS 3.3 Outreach

Metric Type	Performance Standard	Performance Indicator	Acceptable Quality Levels	Surveillance Method
Maintain a professional relationship with the user community by sponsoring or encouraging participation in meetings, seminars, symposia, etc.	Sponsor at least one workshop or seminar annually	Exceptional, Very Good, Good, Satisfactory, Marginal or Unsatisfactory	100% compliance with documented plan	Periodic reviews

PWS 8.0 Task Order Administration

Metric Type	Performance Standard	Performance Indicator	Acceptable Quality Levels	Surveillance Method
PWS 8.9 ODC Reporting	Solutions meet operational needs.	Timeliness, Completeness, & Accuracy.	All ODC Requirements are documented;	Metrics, Periodic Inspection
PWS 8.10.1 Travel Reporting	Solutions meet operational needs.	Timeliness, Completeness, & Accuracy.	All Travel Requirements are documented;	Metrics, Periodic Inspection
PWS 8.16 Monthly Status Reporting	Solutions meet	Timeliness, Completeness, &	Not Later Than the 10th working day of each	Metrics, Periodic

	operational needs.	Accuracy.	month	Inspection

5.0 Task Order Deliverables.

The Contractor shall support the easy flow of information and provide transparency to performance to identify problems and resolutions early. To support this, the Contractor shall provide the following reports outlined in *Table 2* to the HPCMP PET Government PD in accordance with the delivery schedule described below.

All deliverables shall be delivered to the Contacting Officer Representative (COR), or the Alternate Contacting Officer Representative (ACOR) no later than the dates specified in the Performance Matrix or other Government-approved schedule. All deliverables become property of the Government.

Table 2

Plan Type	Key Elements	Delivered To	Delivery Schedule
Transition-In Plan	The contractor shall be responsible, for accomplishing necessary administrative and logistical tasks necessary for the contractor to be fully functional in accordance with this contract effective the start of the paid performance. Tasks that the incoming contractor will need to accomplish during the "Transition In" time period include, but are not limited to the following: •Conduct transition meetings with the Client and the outgoing contractor. •Provide training on the unique Information Technologies to support the PET mission. •Take actions necessary to employ all required personnel with appropriate security clearances in time to be fully functional by the start of the Base Period Performance Start Date. See PWS Section 8.12. •Familiarization with support requirements for the current HPCMP computing environments, networking, and software. •Prepare/credential/indoctrinate	CO and HPCMP PET COR	5 Working Days After Award

Plan Type	Key Elements	Delivered To	Delivery Schedule
	personnel through security and provide network access. •Provide training on the various HPCMP program processes employed •Take necessary actions to obtain/produce CAC cards and other documentation necessary to meet contractual requirements. •Conduct a joint inventory of IT equipment, materials and tools, including software licenses, with the client and the outgoing contractor.		
Program Management Plan (PMP)	The Contractor shall develop and maintain throughout the task order POP, a Program Management Plan (PMP), which shall be used as a foundation for technical, resource, production, and management planning. The PMP shall be due thirty (30) calendar days after the start of each POP. The PMP shall delineate the organizational structure and lines of communication from the Contractor to the Government. The PMP shall describe the approach in managing all tasks related to this Task Order. The PMP shall include the following information: • Schedule and Critical Milestones • Task Dependencies and Interrelationships • Communication Plan • Budget Information (for Reimbursable Items, etc.) • Risk Management • Subcontract Management • Quality Control (QC) Plan Where the Contractor identifies deviations from the PMP, the Contractor shall provide the supporting rationale necessitating the deviation, in a written submission to	CO and HPCMP PET COR	First version delivered 30 days after completion of transition period. Future year versions delivered 30 days after the start of the option period.

Plan Type	Key Elements	Delivered To	Delivery Schedule
	the COR and the CO		
Training Plan	Summarizes HPCMP training opportunities and includes estimates of duration, cost, location, and target attendance.	CO and HPCMP PET COR	First version delivered 30 days after completion of transition period. Future year versions delivered 30 days after the start of the option period. Updates to the training schedule at the end of each quarter.
Inventory Control	Detailed description, location, custodian, and information about usage of all inventory including unique ID numbers and all identifiers.	CO and HPCMP PET COR	First version delivered 30 days after completion of transition period. Future year versions delivered 30 days after the start of the option period.
Knowledge Management Plan	The Contractor shall develop and maintain a plan for knowledge creation, knowledge captured, knowledge sharing, social media activities, video creation, video sharing, knowledge opportunities, and knowledge gaps and include estimates of duration and target audience.	CO and HPCMP PET COR	First version delivered 30 days after completion of transition period. Future year versions delivered 30 days after the start of the option period.
Biweekly Key Accomplishments, Actions, and Issues	Summary Report of: Top 3–5 key accomplishments, actions, and issues by management for efforts executed through MPs under TTAs, Emerging Support Requests, and Initial Prioritization/ Resourcing.	CO and HPCMP PET COR	2nd and 4th Fridays of each month, or next business day if a Government holiday
Monthly Financial Report	Financial Spending Status	CO and HPCMP PET COR	15th day of each month or next business day
Monthly Status Report for MP and SP	Progress against milestones and deliverables will be reported and will allow accurate assessment of project progress.	CO and HPCMP PET COR	15th day of each month or next business day

Plan Type	Key Elements	Delivered To	Delivery Schedule
Bi-annual In-Progress Review (IPR)	Presentation of MP and SP objectives/outcomes against HPCMP mission.	CO and HPCMP PET COR	Within 30 days after the end of the 2nd and 4th quarters. IPR slides shall be submitted to the Government 14 days prior to the date of the IPR
Bi-Annual Success Stories	Captures and provides technical success stories, significant activities, additional actions and communications, and DoD impact. Provide a one page chart that provides the overview of success stories. Include high-resolution graphics as appropriate.	CO and HPCMP PET COR	6 weeks after the end of the 2nd and 4th quarters
Annual Report	Provides year in review: • Success stories • Presentation of MP and SP objectives/outcomes achievements against HPCMP mission • Technology advancements across disciplines • Training accomplished • Management and Financial Summary • Travel Summary • Papers, presentations, and publications	CO and HPCMP PET COR	60 days after end of the period of performance

Plan Type	Key Elements	Delivered To	Delivery Schedule
Transition-Out Plan	Shall identify coordination steps with the incoming contractor and or government personnel to transfer knowledge regarding the following: • project management processes • points of contact • location of technical and project management documentation, status of ongoing technical initiatives • appropriate contractor-to-contractor coordination to ensure a successful transition • identify schedules and milestones • identify actions required of the government • establish and maintain effective communication with the incoming contractor/government personnel for the period of the transition via weekly status meetings	CO and HPCMP PET COR	60 days prior to contract expiration
AdHoc Reports	AdHoc Reports may be required with short turnarounds to meet Government requirements and deadlines.	CO and HPCMP PET COR	Varies

5.1 Initial Business Meeting.

Within ten (10) working days following the task award date, the contractor shall meet with the Client Representative to review goals and objectives of this task order and to discuss technical requirements.

6.0 Records/Data.

This order requires both DFARS 252.227-7014 ("7014") and 252.227-7020 ("7020") for unlimited rights to software and data developed under the order with a copyright assignment to the US Army where a copyright is attainable. Furthermore, with the 7014 and 7020 clauses allowing the Contractor to retain certain rights in software it develops even after assigning the copyright to the government, a special agreement may be required to terminate those enumerated rights for the contractor under this task order for certain projects as determined by the Government. If determined necessary, upon, conclusion of the task order, the Contractor will not

retain any rights in the software being developed. The effect of this special agreement is that the Government is the only entity with the ability to control distribution, dissemination, modification, making derivatives of and making public the software developed under this task order.

7.0 Inspection and Acceptance.

Inspection and acceptance will occur in accordance with ***FAR 52.246-6, Inspection of Services – Time and Material and Labor Hour (May 2001)*** *and* ***FAR 52.246-4 Inspection of Services— Fixed-Price. (Aug 1996)*** In the absence of other agreements negotiated with respect to time provided for Government review, deliverables will be inspected and the contractor notified of the COR or ACOR findings within five (5) working days. If the deliverables are not acceptable, the COR or ACOR will notify the contractor. Acceptance of invoices shall constitute acceptance of performance.

7.1 Quality Control.

The contractor shall develop and maintain an effective quality control plan (QCP) to ensure services are performed in accordance with this Performance Work Statement (PWS). The contractor shall develop and implement procedures to identify, prevent, and ensure non-recurrence of defective services. The contractor's QCP is the means by which he assures himself that his work complies with the requirement of the task order. After acceptance of the QCP, the contractor shall receive the Contracting Officer's (CO) acceptance in writing of any proposed change to the QCP.

The QCP shall be submitted to the GSA Contracting Officer for acceptance not later than ten (10) calendar days after award. The GSA Contracting Officer will notify the contractor of acceptance or required modifications to the plan. The contractor shall make appropriate modifications and obtain acceptance of the plan within fifteen (15) calendar days from the requested modifications date. The QCP shall include the following minimum requirements:

- **a.** A description of the inspection system to cover all major services and deliverables. The description shall include specifics as to the areas to be inspected on both a scheduled and unscheduled basis, frequency of inspections, and the title of inspectors.
- **b.** A description of the methods to be used for identifying and preventing defects in the quality of services performed.
- **c.** A description of the records to be kept to document inspections and corrective or preventative actions taken.
- **d.** All records of inspections performed shall be retained and made available to the Government upon request throughout the task order performance period, and for the period after task order completion, until final settlement of any claims under this task order.

7.2 Quality Assurance.

The government shall evaluate the contractor's performance under this task order in accordance with the Quality Assurance Surveillance Plan (QASP). This plan is primarily focused on what

the Government must do to ensure that the contractor has performed in accordance with the performance standards. It defines how the performance standards will be applied, the frequency of surveillance, and the minimum acceptable defect rate(s).

The Government will evaluate the contractor's performance of this task order. For those tasks listed in the Performance Matrix, the Client Representative or other designated evaluator will follow the method of surveillance specified in this task order. Government personnel will record all surveillance observations. When an observation indicates defective performance, the client Program Manager or other designated evaluator will require the contractor manager or representative at the site to initial the observation. The initialing of the observation does not necessarily constitute concurrence with the observation. It acknowledges that the contractor has been made aware of the non-compliance. Government surveillance of tasks not listed in the Performance Matrix or by methods other than those listed in the Performance Matrix (such as provided in the Inspection clause) may occur during the performance period of this task order. Such surveillance will be done according to standard inspection procedures or other task order provisions. Any action taken by the GSA Contracting Officer as a result of surveillance will be according to the terms of the task order.

8.0 Task Order Terms and Conditions.

In accordance with the PWS Section 3.0, the contractor shall execute deliverables in the form of technical projects, IT studies, implement IT solutions, and sustain IT capabilities for the HPCMP PET initiative.

8.0.1 Technical Directives (TD) Process.

A Technical Directives (TD) is an acquisition process that is used is to logically establish technical and funding requirements for the Special Projects in PWS Section 3.4. The TD will be identified with a unique Task Item number that will provide administrative separation of the requirements and funding for each Special Project. In each task order year, the TD Task Item number will reflect the changes in the Period of Performance (POP). All TD's will end at each task order POP. The Special Projects described in PWS Section 3.4 will use the TD process to establish and manage these efforts.

The Contacting Officer Representative (COR) or Alternate Contacting Officer Representative (ACOR) can request multiple TDs under each Annual Special Project Contract Line Items (CLIN) for a given task order year, but the total of all approved TDs within a given contract year cannot exceed the annual SP Budget Amount for that task order year. In the below table, there are six (6) Annual Special Project Contract Line Items (CLIN). The Government has established a total not-to-exceed Special Project budget of $28,682,464.52, for the entire Task Order.

Annual Contract Line Item Number	Period of Performance	Annual SP Amounts
1000 Special Projects:	**Base Year:**	**$5,000,000.00**
2000 Special Projects:	**Option Year 1**	**$5,096,500.00**

3000 Special Projects:	**Option Year 2**	**$5,194,862.45**
4000 Special Projects:	**Option Year 3**	**$5,295,123.30**
5000 Special Projects:	**Option Year 4**	**$5,397,319.18**
6000 Special Projects:	**6 Month Extension**	**$2,698,659.59**

In accordance with the guidance in PWS Section 3.4, the COR or ACOR will then submit documentation to identify the TD Title, Technical Requirements and Contract Information, Estimated Labor, Travel and ODC amounts, Period of Performance, a Technical Description of Effort, and Other project information as required. The TD must be within scope of the task order and all other applicable requirements. The TD can be incrementally funded as per PWS Section 11.3.

8.0.2 Establishing a Special Project within the TD process.

(a) A TD requirement may be identified by the contractor or the Government, but must be approved by the COR and the Contracting Officer (CO) before preparation of the work request may begin.

(b) The COR shall initiate a TD by submitting a memo in GSA's AAS Business Systems (AASBS) portal, https://portal.fas.gsa.gov. See PWS Appendixes B, C, and D as an example and format for a TD Request. The following must be included in the TD request:

- TD identification number and Item Number.
- Applicable task order performance work statement paragraph.
- Applicable task order period of performance.
- Listing of Deliverables and critical Milestones, as applicable.
- Requesting Government activity.
- Detailed description of the service(s) to be performed including any travel and materials required.
- Estimated completion date (based on an estimated start date)
- Cost estimate that includes a TD technical plan and estimated contractor cost, with a breakout of Alliant labor categories, hours, travel, IT Support requirements as applicable.
- Each TD quote or cost estimate shall also include:
  Government Furnished Equipment (GFE), if applicable.
  Government Furnished Information (GFI), if applicable.
  Alliant 2 Contract Access Fee (CAF) applied to the Total Estimated Contractor Cost**.**
- For all special projects that require Security Classification, the technical description and requirement will be provided by the COR or ACOR in a proper secured location, but not in the GSA PWS or task order file. All TD cost and technical description will be listed as UNCLASSIFIED in GSA Contractor Information System such as AASBS.

(c) After the COR approves the TD, the CO will review it. If the CO approves the work request, the CO will initiate a task order modification to add a sub-line item after funding has been received and accepted.

(d) The contractor shall maintain a history of all TDs (identified, submitted, approved, disapproved, and awarded) as well as copies of all applicable documentation.

8.0.3 TD Modifications:

After the TD has been issued, changes to the TDs will be processed by the issuance of a Bilateral Task Modification. The government or contractor can request a modification based on the technical needs of the government. The modification process will follow the same submittal process as described in PWS Section 8.0.2. (a through d) listed above.

Upon the technical review and approval of a "fair and reasonable" cost estimate, the GSA Contracting Office will issue a Bilateral Task Modification with TD cost ceiling and funding ceiling. No contractor performance on the TD shall be made without government task order authorization and funding of the TD.

8.0.4 TD Tasks Items, Funding and Administration:

To facilitate the functional requirements or separation of funding, Task Items will provide the logical separation of each TD in a given POP. In the execution of each new task order year, a new Task Item Number will be identified to constitute the separation of funding base on the "bona fide" needs of the funding attributes and obligation requirements.

Task Item Numbering Example:

Specal Projects #1

Base Year – Task Item is coded as: 1001
Option Year 1 – Task Item is coded as: 2001
Option Year 2 – Task Item is coded as: 3001
Option Year 3 – Task Item is coded as: 4001
Option Year 4 – Task Item is coded as: 5001
6 Mon. Ext. – Task Item is coded as: 6001

8.1 Place of Performance.

The work to be performed under this task order will be performed at these CONUS HPCMP sites:

- U.S. Air Force Research Laboratory DoD Supercomputing Resource Center (DSRC), Wright Patterson Air Force Base, OH [AFRL DSRC]
- U.S. Army Research Laboratory DSRC, Aberdeen Proving Ground, MD [ARL DSRC]
- U.S. Army Engineering Research and Development Center DSRC, Vicksburg, MS [ERDC DSRC]
- U.S. Navy DSRC, Stennis Space Center, MS [Navy DSRC]
- U.S. Naval Research Laboratory, Washington, DC [NRL-DC]

An additional HPCMP work site where work may be performed if option is exercised:

- Maui High Performance Computing Center DSRC [MHPCC DSRC]

With Government concurrence, personnel located at non-HPCMP sites may be proposed to address unique requirements, as established by a TD Request, (as per PWS Section 8.01). However, in the case of internal contracting administrative, management and financial functions, the Government is not providing Contractor Office Space. The Contractor shall perform portions of the work at contractor facilities. The government will not pay for local travel, and will expect contractor to be at the government facilities during normal working hours. In the case of approved CLINs for offsite technical projects, the Contractor will have to travel to temporary duty locations to support various planning, liaison, and task execution activities. The contractor may be required to travel to various CONUS and OCONUS locations as directed by the Government. (For specific details, see PWS Section 8.8, Contractor Furnished Items and Facilities and PWS Section 8.10.1, Travel).

8.1.1 Mission Essential Services Determination:

Performance of Services during crisis declared by the President of the United States, the Secretary of Defense, or Overseas Combatant Commander. The performances of these services are considered to be Non-Mission essential during time of crisis. Should a crisis be declared, the Contracting Officer or his/her representative will verbally advise the Contractor of the revised requirements, followed by written direction.

8.1.2 Continuation of Operations Plan:

Some of the government facilities are subject to mandatory evacuations in the event of minor and major hurricanes. The first priority is the safety of all government and contractor personnel. If the Commanding Officer of the Base declares an Emergency that will close the base, all contractor personnel shall depart the base and take personal safety measures. If requested by the COR and approved by the Contracting Officer, Contractor personnel may Telework on their assigned task. Any Contactor personnel working CONUS or OCONUS, whose work is not affected by the base closure may still work on task or return to their duty Place of Performance in accordance to PWS Section 8.10.1 Travel. Since this task type is Time and Material, only hours actually worked on behalf of the government will be accounted for reimbursement. Any CLIN affected by an emergency base closure that had a quoted delivery date will be reevaluated on a case by case basis, since some CLINs will be developed off base or in a CONUS or OCONUS location.

8.2 Hours of Operation:

The contractor is responsible for conducting business between the hours of 7:00 AM to 6:00 PM, Monday thru Friday, except Federal holidays or when the Government facility is closed due to local or national emergencies, administrative closings, or similar Government directed facility closings. For other than firm fixed price contracts, the contractor will not be reimbursed when the government facility is closed for the above reasons. The Contractor must at all times

maintain an adequate workforce for the uninterrupted performance of all tasks defined within this PWS when the Government facility is not closed for the above reasons. When hiring personnel, the Contractor shall keep in mind that the stability and continuity of the workforce are essential.

8.2.1 Extended Hours:

Extended hours may be authorized on this task order. Extended hours are defined as any hours in excess of eighty (80) hours in a two (2) week billing period. Any use of extended hours must be pre-approved in writing by the COR or ACOR.

8.2.2 Recognized Holidays:

New Year's Day	Labor Day
Martin Luther King Jr.'s Birthday	Columbus Day
President's Day	Veteran's Day
Memorial Day	Thanksgiving Day
Independence Day	Christmas Day

Any other day designated by Federal statute, Executive order, or the President's proclamation.

8.3 Contracting Officer's Representative (COR) and Alternate Contacting Officer's Representative (ACOR) Designation:

Pursuant to DFARS 252.201-7000, before task order award, the GSA Contracting Officer will appoint a COR and ACOR and issue a COR appointment letter stating the authority for the COR. The contractor will receive a copy of the written designation.

The COR monitors all technical aspects of the task order and assists in contract administration. The COR is authorized to perform the following functions: assure the Contractor performs the technical requirements of the task order; perform inspections necessary in connection with task order performance; maintain written and oral communications with the Contractor concerning technical aspects of the task order; issue written interpretations of technical requirements, including Government drawings, designs, and specifications; monitor the Contractor's performance and notify both the CO and the Contractor of any deficiencies; coordinate the availability of government furnished property; and provide site entry for Contractor personnel. A letter of designation issued to the COR, a copy of which is sent to the Contractor, states the responsibilities and limitations of the COR, especially with regard to changes in cost or price, estimates or changes in delivery dates. The COR is not authorized to change any of the terms and conditions of the resulting order.

8.3.1 Task Management:

Management of this task will be performed by GSA through the COR. The COR will provide technical assistance and clarification required for the performance of this task, participate in project meetings, and receive task order deliverables. Deliverables must be submitted through or documented within the GSA ASSIST web-based order processing system for client acceptance.

8.4 Program Management & Key Personnel:

The following are considered key personnel by the government:

- Program Director
- Program Manager
- DSRC On-site Lead Staff Scientist (per DSRC)
    - Note: Navy DSRC On-site Lead Staff Scientist will also oversee NRL-DC site

The Contractor shall designate a responsible corporate official with no responsibility other than this task order and empower this official to make and implement all decisions regarding contract performance. The Contractor shall have a management and technical leadership team to provide oversight, integration, customer interface, and communication support. At a minimum the contractor shall propose a Program Director (PD) and a Program Manager (PM) who shall be responsible for all work performed under the contract. The PD and PM shall have full authority to act for the contractor on all contract matters relating to daily operation of this contract. The PD and PM shall be available between the hours of 8:00 AM to 5:00 PM Central Time, Monday thru Friday, except Federal holidays or when the government facility is closed for administrative reasons as defined in PWS Section 8.2 Hours of Operations.

In addition, the Contractor shall designate an On-site Lead Staff Scientist at each DSRC location to serve as the lead point of contact (POC) at each of those locations. In addition to being the lead representative, these On-site Lead Staff Scientists shall help provide the day-to-day leadership needed for technical team members at those locations as well as being a working team member.

Qualifications for all key personnel are listed below:

Program Director

Role/Qualifications	General Responsibilities
• More than 20 years of experience as leader of science and technical programs. • Experience in establishing and managing strategic partnerships to achieve program objectives. • Science/Technical PhD with HPC experience. • Excellent communication skills.	• Executive program oversight. • Responsible for overall strategic program direction and implementation. • Principal interface with PET Government Program Director (PD) on strategic programmatic issues.

Program Manager

Role/Qualifications	General Responsibilities
• More than 15 years of program/project management experience with technical programs. • Significant expertise in applying project management principles to achieve desired outcomes of the project/program, including: performance, risk, resource, contract/subcontract, process improvement/quality, and budget management. • MS in an academic discipline relative to the position. • Excellent communication skills. • Experience with HPC science or engineering programs.	Supports PD with: • Performance tracking and metric reporting; escalates performance gaps and participates in corrective action/resolution process. • Timely, accurate financial reporting and invoicing. • Meeting metrics, tasks, and deliverables.

DSRC On-site Lead Staff Scientist

Role/Qualifications	General Responsibilities
• PhD required. • 10 years of HPC-related experience preferred. • Demonstrated experience in multidisciplinary computational environments. • Documented authorship in peer-reviewed publications.	• Works with HPCMP customers to identify potential multidisciplinary efforts. • Participates on appropriate teams as part of the multidisciplinary efforts. • Facilitates the process by which efforts are presented for consideration to the Government. • Supports major efforts and may serve as principal investigator. • Primary interface with Government leadership.

Prior to award, the contractor is not required to identify key personnel by name. If awarded this order, the contractor shall identify key personnel by name and ensure that any substitution of key personnel provides an equally or higher qualified individual. Any substitution of personnel must be of equally qualified individuals as those identified in the contractor's quote. Key personnel may not be added nor removed from the task without written notice to the GSA Contracting Officer. The written notice must be submitted at least 15 days prior to personnel actions.

8.4.1 Expertise:

The contractor is responsible for providing personnel who are fully qualified to perform the requirements identified in this performance work statement. In Appendix A, a list of the Government estimated annual workload is presented as a projection of Alliant Direct Labor Categories that are recommended for this task order. As per the Alliant Basic Contract, Section J in Attachment 4: Labor Category Descriptions, the knowledge and skill level expertise will be applied to this task order.

8.5 Disclosure of Information:

Information made available to the contractor by the Government for the performance or administration of this effort shall be used only for those purposes and shall not be used in any other way without the written agreement of the GSA Contracting Officer. The contractor agrees to assume responsibility for protecting the confidentiality of Government records, which are not public information. Each contractor or employee of the contractor to whom information may be made available or disclosed shall be notified in writing by the contractor that such information may be disclosed only for a purpose and to the extent authorized herein.

8.6 Limited Use of Data:

Performance of this task order may require the contractor to access and use data and information proprietary to a Government agency or Government contractor which is of such a nature that its dissemination or use, other than in performance of this effort, would be adverse to the interests of the Government and/or others. Contractor and/or contractor personnel shall not divulge or release data or information developed or obtained in performance of this effort, until made public by the Government, except to authorized Government personnel or upon written approval of the GSA Contracting Officer. The contractor shall not use, disclose, or reproduce proprietary data that bears a restrictive legend, other than as required in the performance of this effort. Nothing herein shall preclude the use of any data independently acquired by the contractor without such limitations or prohibit an agreement at no cost to the Government between the contractor and the data owner which provides for greater rights to the contractor.

8.7 Government Furnished Information.

The Government will provide the Contractor with documentation as required. Coordination of specific information will be made with individual HPCMP or DSRCs Project Managers at the time of order. All government furnished information (GFI) and government furnished Material (GFM) shall be returned at the completion of this task order. The Government will provide the following within 5 days after award of the order:

(a) DoD Directive 5000.1
(b) DoD Directive 5000.2
(c) USSOCOM Directives 700-10 and 70-1

8.8 Government Furnished Items and Facilities.

Except for those items or services stated as Government furnished, the contractor must furnish everything needed to perform this task order according to all its terms. As stated in PWS Section 8.1, Place of Performance the task work shall be primarily performed on-site within Government facilities. The contractor shall also provide training that is necessary for contractor personnel at their own expense.

8.9 Other Direct Cost (ODC)

As per PWS Section 8.0, Task Order Terms and Conditions, the Contractor is authorized to purchase IT support items such as hardware, software, firmware, related supplies/warranties/help desk requirements, technical refresh, and other support items as needed that are integral and necessary for the performance of this task order. IT Support items are ancillary in nature and integrally related to the contractor's ability to perform the service being acquired, i.e., they must be necessary for the completion of the task. That is, the acquisition of IT Support cannot be the primary purpose of a task order. An IT Support ODC request must satisfy the criteria expressed within the scope of the task order and must not duplicate costs covered in other areas of the task order. Such requirements will be identified at the time the task order is issued or may be identified during the course of an order, by the Government or the contractor.

a. ODC for IT purchases for hardware, software, firmware, related supplies/warranties/help desk requirements, technical refresh and other support as needed that are integral and necessary for the performance of this task order shall be reimbursed in accordance with the billing and payment clauses of this task order. The GSA Contracting Officer will establish a not-to-exceed IT Support ceiling and determine the fair and reasonableness of the proposed price/prices. Materials on T&M Orders must comply with FAR 52.232-7 Payments Under Time-and-Materials and Labor Hour Contracts (Feb 2007). Indirect Costs on T&M Orders must comply with FAR 52.232-7 Payments Under Time-and-Materials and Labor Hour Contracts (Feb 2007).

b. Prior to acquiring ODC for IT items, the contractor shall submit a request form (in contractor format) to the COR or ACOR for verification and technical acceptance. This form must identify the item(s) to be purchased, estimated cost(s), vendor, and reason for purchase.

If an ODC for IT purchase requests is over the Simplified Acquisition Procedures (SAP) threshold level (currently set at $150,000.00) and is <u>not</u> sole-source/brand name procurement, then the contractor must obtain multiple quotes to ensure best value to the Government.

If an ODC for IT purchase requests is over the SAP level and the requirement is a sole-source/brand name procurement, then the government must first approve the IT Support purchase in accordance with FAR 6.302-1. The COR or ACOR will provide the signed "Class Justification and Approval to Procure Using Other Than Full and Open Competition" documentation to GSA Contracting Officer for Contracting Officer Certification.

If an ODC for IT purchase requests is over the SAP level, the contractor shall also submit an "Actual ODC Documentation Summary" (in contractor format), showing the ODC procurement with multiple quotes and final price and/or the sole-source/brand name procurement final price into the GSA ASSIST portal for Invoice Acceptance Information when submitting monthly invoices.

c. The Contractor will then submit to the GSA Contracting Officer, the COR, or the ACOR the technically approved ODC request form to GSA through a Post Award Collaboration Memo via ASSIST. The GSA Contracting Officer is responsible for the review and approval of the request. In some instances, a task order modification may be required to acquire the ODC Support. In that situation, the ODC may not be purchased prior to award of the modification.

d. The Government has established a total not-to-exceed ODC Support budget of **$587,189.02** for the entire Task Order.

Period of Performance	ODC for HPC Support
Base Year:	$100,000.00
Option Year 1	$103,000.00
Option Year 2	$106,090.00
Option Year 3	$109,272.70
Option Year 4	$112,550.88
6 Month Extension	$56,275.44

See Appendix A for CLINs 0060 Levels ODC for Base Year:

e. IT Hardware shall only be purchased under this Task Order if it is connected and/or integral to the services being performed. Contractor shall possess Defense Contract Audit Agency (DCAA) approved procurement system The Contractor shall provide notification to the Contracting Officer prior to award of any subcontract that exceeds the simplified acquisition threshold. The Contracting Officer will review the Contractor's notification and supporting data to ensure that the proposed subcontract is suitable and provides consent pursuant to FAR 52.244-2, Subcontract (June 2007).

8.9.1 CHESS

The contractor will be required to give first consideration to Army Computer Hardware, Enterprise Software and Solutions (CHESS) contracts/blanket purchase agreements when purchasing hardware and software required for performance of the task order. Materials acquired by the contractor with Government funds, for performance of this task order, are the property of the Government. The contractor shall utilize Enterprise Software Initiative (ESI) source software and CHESS contract source equipment in accordance with applicable provisions. In addition to any other equipment, the contractor shall separately identify ESI source software items and CHESS contract source equipment in their proposal. For ESI source software, the

contractor shall request approval to order from the Government supply sources. For proposed materials that are not from the identified Government supply sources for ESI source software or CHESS contract source equipment, the contractor shall provide a justification why those sources are not being utilized to support approval by the Contracting Officer. Contractor costs for ESI source software shall be reimbursed at the prices charged to the contractor, with no mark-up percentage for loadings, fee or profit. Fee shall not be allowed.

GSA will issue a Letter of Authorization to Utilize CHESS and ESI contracts/blanket purchase agreements contracts as required at time of procurement. This letter will authorize the contractor to place orders under the CHESS or other alternative source in procuring equipment and supplies for services for the exclusive use and ownership of the Government.

8.10 Reimbursable Costs.

The inclusion of reimbursable costs is a direct allocation of costs associated with support of this task order. All reimbursable costs must be in conformance with the task order requirements and authorized by the COR or ACOR and the GSA Contracting Officer.

8.10.1 Travel.

The contractor may be required to travel to various CONUS and OCONUS locations as directed by the Government. All travel must be authorized by the COR or ACOR and be in compliance with the task order and all other applicable requirements. Travel costs will not be approved for local travel, defined as less than 50 miles from the Task Order Place of Performance. (see PWS Section 8.1) All travel must be performed in accordance with the Federal Joint Travel Regulation (JTR) to include per diem limits of reimbursements.

a. Travel will be cost reimbursable no fee and will be reimbursed at actual cost in accordance with the limitations set forth in **FAR 31.205-46**. Profit shall not be applied to travel costs. Contractor may apply indirect costs to travel in accordance with the contractor's usual accounting practices consistent with **FAR 31.2**. The contractor shall ensure that the requested travel costs will not exceed the amount authorized in this task order.

A contractor-generated travel authorization request form shall be submitted to the COR or the ACOR for authorization signature. The approved travel request shall be posted in GSA ASSIST and a Post Award Collaboration Memo prior to the travel. The form shall identify the name(s) of travelers, dates of trip(s), location(s), estimated cost(s), purpose and an estimate of the remaining travel funds available. No travel shall be made without government authorization. The contractor shall also submit the Travel Expense Summary (as listed in PWS Section 10.6, Attachment "a") into the GSA ASSIST Invoice Acceptance Information form when submitting monthly invoices.

c. The Government will establish the locations and the duration of travel as required.

d. The Government has established a total not-to-exceed travel budget of **$1,467,972.55** for the entire Task Order.

Period of Performance	Travel for HPC Support
Base Year:	**$250,000.00**
Option Year 1	**$257,500.00**
Option Year 2	**$265,225.00**
Option Year 3	**$273,181.75**
Option Year 4	**$281,377.20**
6 Month Extension	**$140,688.60**

See Appendix A for CLIN 0010 and 0055 Levels Travel for Base Year:

e. Furthermore, the contractor must clearly identify any subcontractor or team member indirect costs.

8.11 Privacy Act.

Work on this project may require that personnel have access to Privacy Information. Personnel shall adhere to the Privacy act, Title 5 of the U.S. Code, Section 552a and applicable agency rules and regulations.

8.12 Security.

The Contractor must have a SECRET Facility Clearance and SECRET safeguarding capabilities (collateral only) at the time of award. Contractor personnel performing work under this contract may be required to obtain a security clearance, per Army Regulation AR 380-67, at the appropriate level at the start of the period of performance. Per PWS Section 8.15, clearance requirements for contractor personnel will be communicated by the Government based on the effort supported and site location at the time of award.

Security Clearances and Facility Security Clearance (FCL) requirements are required to be maintained for the life of the contract in accordance with (IAW), see the draft DD254 listed in PWS Section 10.6, Attachment "c". All contractor personnel with access to unclassified information systems, including e-mail, shall at a minimum have a favorable National Agency Check with Inquiries (NACI).

Requirements listed on the draft DD254 (PWS Section 10.6, Attachment "c" shall apply. Contractor personnel requiring access to the HPCMP or the DSRCs and other military facilities are subject to security and Visit Request requirements. All contractor personnel requiring user level access to DON or DoD networks and information systems, system security and network defense systems, or to system resources providing visual access and/or ability to input, delete or otherwise manipulate sensitive information without controls to identify and deny sensitive information are required to have a favorable adjudicated NACI with clearance eligibility determined by DSS.

The contractor will be required to have a SECRET facility clearance with SECRET safeguarding capabilities not to exceed two (2) cubic feet. The contractor will require access to Communications Security (COMSEC) Information; Restricted Date; Formerly Restricted Data; Sensitive Compartmented Information (SCI); Non-SCI; NATO Information; Foreign Government Information; and For Official Use Only (FOUO) Information. The contractor will also require access to the SIPRNET systems.

Support to this PWS requires daily interaction in office, laboratory, developmental, and field work areas between government and contractor personnel. Interaction involves the discussion and development of information that is primarily classified and/or competition-sensitive for the majority of the PWS efforts. Working in the classified environment on a daily basis may present difficulties for offeror's due to availability of classified network drops, security and integrity of existing facilities, and qualification of personnel for handling, control, and safeguarding of National Security Information up to and including SECRET material, as well as required support to developmental efforts involving SECRET. Daily interaction with government personnel, due to these factors, is not expected to be readily allocable to telepresence methods such as video teleconferencing, online web portals, or remote desktop connections.

The contractor will be provided access to DREN at the Government sites. The contractor shall not access classified systems from the contractor's site. Contractor personnel shall be required to obtain and maintain security badges and adhere to the security requirements at the Government installation they are supporting.

8.13 Information Security Requirements

8.13.1 Controlled Unclassified Information (CUI):

Controlled unclassified information (CUI) is official information that requires the application of controls and protective measures for a variety of reasons and has not been approved for public release, to include technical information, proprietary data, information requiring protection under the Privacy Act of 1974, and Government developed privileged information involving the award of contracts.

CUI is a categorical designation that refers to unclassified information that does not meet the standards for National Security Classification under Executive Order 12958, as amended, but is (a) pertinent to the national interest of the United States or to the important interests of entities outside the Federal Government, and (b) under law or policy requires protection from unauthorized disclosure, special handling safeguards, or prescribed limits on exchange or dissemination.

8.13.2 Minimum Requirements for Access to Controlled Unclassified Information (CUI):

Prior to access, contractor personnel requiring access to DON controlled unclassified information (CUI) or "user level access to DON or DoD networks and information systems, system security and network defense systems, or to system resources providing visual access and/or ability to input, delete or otherwise manipulate sensitive information without controls to identify and deny

sensitive information" who do not have clearance eligibility are required to submit a Questionnaire for Public Trust Positions (Standard Form 85P) through the cognizant Facility Security Officer or contractor entity representative to HPCMP or DSRCs Security, for a suitability determination by DON Central Adjudication Facility.

8.13.3 Minimum Protection Requirements for Controlled Unclassified Information (CUI):

Task Order deliverables taking the form of unclassified limited-distribution documents (e.g., For Official Use Only (FOUO), Distribution Statement Controlled) are not authorized for public release and, therefore, shall not be posted on a publicly accessible web server or electronically transmitted via E-Mail unless appropriately encrypted.

8.14 Operations Security

Operations Security (OPSEC) is concerned with the protection of critical information: facts about intentions, capabilities, operations, or activities that are needed by adversaries or competitors to bring about failure or unacceptable consequences of mission accomplishment.

Critical information includes information regarding:

- Operations, missions, and exercises, test schedules or locations;
- Location/movement of sensitive information, equipment, or facilities;
- Force structure and readiness (e.g., recall rosters);
- Capabilities, vulnerabilities, limitations, security weaknesses;
- Intrusions/attacks of DoD networks or information systems;
- Network (and system) user IDs and passwords;
- Movements of key personnel or visitors (itineraries, agendas, etc.); and
- Security classification of equipment, systems, operations, etc.

The contractor, subcontractors and their personnel shall employ the following countermeasures to mitigate the susceptibility of critical information to exploitation, when applicable:

- Practice OPSEC and facilitate OPSEC awareness;
- Immediately retrieve documents from printers assessable by the public;
- Shred sensitive and Controlled Unclassified Information (CUI) documents when
- no longer needed;
- Protect information from personnel without a need-to-know;
- When promulgating information, limit details to that essential for legitimacy;
- During testing and evaluation, practice OPSEC methodologies of staging out of sight, desensitization, or speed of execution, whenever possible.

8.15 Clearances.

The highest level of security clearance required for this effort is SECRET. Clearance Levels will be determined at time of award. SECRET clearances will be minimal and authorized by the Client Representative (CR) on an as-needed basis only based on work and performance site requirements. The contractor must possess a SECRET facility clearance and SECRET safeguarding capabilities (collateral only) at the time of award. The contractor will have access to SCI, NON-SCI intelligence information, and For Official Use Only (FOUO) information. In performing these task order requirements, the contractor will receive and generate classified information, fabricate, modify, or store classified hardware, and have Operations Security (OPSEC) requirements. The contractor is responsible for providing employee clearance information to the Client Representative (CR) and/or local security officer for use in preparing a DD-254 form. Contractor key personnel performing on this task order shall have a SECRET clearance at the time of award.

Other work performed under this TO may require lower clearance levels appropriate for TO performance. Contractors having access to and/or safeguarding classified information/material shall require the appropriate security clearance. The security policies, procedures and requirements stipulated in the NISP; NISPOM and supplements thereto are applicable, to include the following security requirements and/or guidance whenever task order performance will occur on a DoD installation or within a DoD controlled facility or activity:

a. The contractor shall possess or acquire a facility clearance equal to the highest classification stated in the above paragraph in accordance with the NISPOM for TO performance.

b. The contractor's procedures for protecting against unauthorized disclosure of information shall not require DoD employees or members of the Armed Forces to relinquish control of their work product, whether classified or not, to the contractor.

c. Prior to beginning operations involving classified information at the Government facility, the offeror must possess, or acquire prior to award of a task order, a facility clearance equal to the highest classification stated on the Contract Security Classification Specification 9, draft DD Form 254, See PWS Section 10.6 attachment “c” , the contractor shall enter into a security agreement (or understanding) with the local Government security office. This will ensure contractors follow local security procedures while performing at the Government facility. As a minimum, the agreement shall identify the security actions that will be performed: (a) By the Government facility for the contractor, such as providing storage and classified reproduction facilities, guard services, security forms, security reviews under DoD 5220.22-M, classified mail services, security badges, visitor control, and investigating security incidents; and (b) Jointly by the contractor and the installation, such as packaging and addressing classified transmittals, security checks, internal security controls, and implementing emergency procedures to protect classified information.

d. Pursuant to Section 808 of Publication. L. 102-190 (DFAS 204, Subpart 204.402(2)), DoD employees or members of the Armed Forces who are assigned to or visiting a contractor facility and are engaged in oversight of an acquisition program will retain control of their work product. Classified work products of DoD employees or members of the Armed Forces shall be handled in accordance with DoD 5220.22-M. Contractor procedures for protecting against unauthorized

disclosure of information shall not require DoD employees or members of the Armed Forces to relinquish control of their work products, whether classified or not, to a contractor.

e. If a visit to a contractor facility will require access to classified information, the visitors must give the contractor advance written notice.

f. When TO performance will involve classified information, the CO will ensure that the DD Form 254, Contract Security Classification Specification, includes the complete mailing address of the Information Security Program Manager (ISPM) and the responsible MAJCOM security forces. Promptly after TO award, the CO will provide a copy of the DD Form 254 to each addressee on the DD Form 254.

g. Work on this project may require that personnel have access to Privacy and other sensitive information. Personnel shall adhere to the Privacy Act, Title 5 of the United States code, Section 552a and applicable Client Agency rules and regulations.

h. Contractor personnel shall not divulge or release privacy data or information developed or obtained in the performance of this TO, until made public or specifically authorized by the Government. The contractor shall not use, disclose, or reproduce third party companies' proprietary data, other that as authorized and required in performance of this TO. Personnel working on this project will be required to sign a NDA (see PWS Section 10.6, Attachment "b") immediately upon their start on the project. The contractor's procedures for protecting against unauthorized disclosure of information shall not require DoD employees or members of Armed Forces to relinquish control of their work product, whether classified or not, to the contractor.

8.16 Monthly Status Report.

The contractor shall identify and report all program management actions and the financial management status in a Monthly Status Report (MSR), and as requested by the Government. Report shall be due the 15th day of the month following the close of the calendar month or the next business day (See PWS Section 5.0 Task Order Deliverables). An invoice may not be used in lieu of any portion of this report. This report shall be electronically delivered to the COR and ACOR via GSA ASSIST and, at a minimum, contain the following information:

a. Task order number
b. Task order title
c. Reporting period
d. Brief description of requirements
e. Brief summary of accomplishments during the reporting period and significant events regarding the task order, including the associated contractor employee names
f. Any current or anticipated problems
g. Staffing changes and organization chart with Key Personnel listed by name.
h. Brief Summary of activity planned for the next reporting period
i. Description of any travel or unique services provided
j. Deliverable summary (deliverable name, due date, % completed, submittal date, comments)
k. In accordance with PWS Section 11.3 Incremental Funding, report in the MSR, if the costs at the Task Order level will exceed **75** percent of the total funded amount.
l. Billing summary:

- Labor hours for each skill level (SL) category (specify the contractor employee name and SL
- Total labor charges for each skill category
- Support Items, which must be individually itemized and specified by each individual category, i.e. travel and per diem, training, security check fees, commodities
- Total Support Item charges including G&A - if allowed
- Total monthly charges.

Note: Travel charges must include the traveler's name, dates of travel, destination, purpose of travel and cost for each trip.

8.17 Personal Service.

GSA will not issue orders to provide services prohibited by FAR Part 37.1. The administration and monitoring of the contractor's performance by GSA or the Client Representative shall not be as detailed or continual as to constitute supervision of contractor personnel. Government personnel may not perform any supervisory functions for contractor personnel, such as interviewing, appraising individual performance, scheduling leave or work, or directing how to perform work.

GSA meets the needs of its clients for support through non-personal services contracts/task orders. To counter the circumstances that infer personal services and to preserve the non-personal nature of the contract/task order, the contractor shall adhere to the following guidelines in the performance of the task.

a. Provide for direct supervision of all contract employees assigned to the task.
b. Refrain from discussing the issues such as skill levels and hours, salaries, cost and funding data, or administrative and personnel matters affecting contractor employees with the client.
c. Ensure close communication/coordination with the GSA Customer Account Manager, reporting problems to them as they occur (not waiting for a meeting).
d. Do not permit Government officials to interview potential contractor employees, discuss individual performance, approve leave or work scheduling of contractor employees, terminate contractor employees, assist contractor employees in doing their jobs or obtain assistance from the contractor in doing Government jobs.
e. Do not assign contractor personnel to work under direct Government supervision.
f. Maintain a professional distance from Government employees.
g. Provide contractor employees with badges, if appropriate, identifying them as contractors.
h. Ensure proper communications with the Government. Technical discussions and Government surveillance are acceptable, but the Government cannot tell the Contractor how to do the job.
i. Assign a task leader to the task order. The task leader or alternate shall be the only one who accepts tasking from the assigned Government point of contact or alternative.
j. When travel is required for the performance on a task, contractor personnel are only to travel as directed by their contract management.

8.18 Section 508 Compliance.

All electronic and information technology (EIT) procured through this task order must meet the applicable accessibility standards at 36 CFR 1194, unless an agency exception to this requirement exists. 36 CFR 1194 implements Section 508 of the Rehabilitation Act of 1973, as amended, and is viewable at http://www.section508.gov.

8.19 Past Performance.

The Government will provide and record Past Performance Information for acquisitions over the simplified acquisition threshold (SAT) utilizing the Contractor Performance Assessment Reporting System (CPARS). The CPARS process allows contractors to view and comment on the Government's evaluation of the contractor's performance before it is finalized. Once the contractor's past performance evaluation is finalized in CPARS, it will be transmitted into the Past Performance Information Retrieval System (PPIRS).

8.20 Performance Based Requirements.

This requirement is performance based. The contractor's performance will be evaluated by the government as described in the Quality Assurance Surveillance Plan (QASP). The first evaluation will cover the period ending six months after date of contract award with successive evaluations being performed at the end of each twelve-month period of performance thereafter until the contractor completes performance under all tasks. Evaluations will be posted to the Contractor Performance Assessment Report System (CPARS).

8.21 Contingency Response Support.

In the event of a national defense, national disaster, or similar crisis, the contractor shall provide, as directed by the Government lead, a contingency response capability to rapidly assist HPCMP or DSRCs in the documentation and assessment of operational shortfalls or capability gaps, situational analyses, identification of potential IT solutions, and systems engineering recommendations to help mitigate loss of life or property to U.S. personnel. The contractor shall assist HPCMP or DSRCs in the establishment of emergency IT networks, databases, web sites, or obtaining peripheral IT support equipment (i.e. COTS routers, servers, OS licenses) in response to such disasters until relieved by the local Government lead or return to normal operations has been declared.

8.22 Contractor Conversion.

This is to give notice that the Government may convert all, some, or none of the contractor positions to Civil Service at some time during the life of this task order. The support provided under this task order may or may not be affected.

8.23 Distribution Limitations Statement.

Technical documents generated under this delivery order shall carry the following Distribution Limitation Statement. Word-processing files shall have the statements included in the file such that the first page of any resultant hard copy shall display the statements. Additionally, each diskette delivered shall be marked externally with the statements and proper security classification.

DISTRIBUTION AUTHORIZED TO DOD AND U.S. DOD CONTRACTORS ONLY; ADMINISTRATIVE /OPERATIONAL USE, (DATE STATEMENT APPLIED). OTHER REQUESTS FOR THIS DOCUMENT SHALL BE REFERRED TO HPCMP

NO DISTRIBUTION OF THIS DOCUMENT SHALL BE MADE TO DTIC.
NO SECONDARY DISTRIBUTION AUTHORIZED WITHOUT PRIOR WRITTEN APPROVAL OF HPCMP.

WARNING - This document contains technical data whose export is restricted by the Arms Export Control Act (Title 22, U.S.C., Sec 2751, et seq.) or the Export Administration act of 1979, as amended Title 50, U.S.C., app 2401 et seq. Violations of these export laws are subject to severe criminal penalties. Disseminate in accordance with provisions of DoD Directive 5230.25.

Destruction Notice - For classified documents, follow the procedures in DoD 5220.22-M, National Industrial Security Program Manual, Chapter 5, Section 7, or DoD 5200.1-R, Information Security Program regulation. For unclassified, limited documents, destroy by any method that will prevent disclosure of contents or reconstruction of the document.

8.24 Release of Information.

All technical data provided to the contractor by the Government and/or developed by the contractor for the government shall be protected from public disclosure in accordance with the markings contained thereon and by **PWS Sections 8.23**. All other information relating to the items to be delivered or services to be performed under this contract, including hardware contractor proprietary information may not be disclosed by any means without prior approval of the appropriate HPCMP or DSRCs authority. Dissemination or public disclosure includes, but is not limited to: permitting access of such information by foreign national(s) or by any other persons or entities; publication of technical or scientific papers; advertising; or any other proposed public release. The contractor shall provide adequate physical protection of such information so as to preclude access by any person or entity not authorized such access by the Government.

8.25 Organizational Conflict of Interest (OCI):

Contractor and subcontractor personnel performing work under this contract may receive, have access to, or participate in the development of proprietary or source selection information (e.g., cost or pricing information, budget information or analyses, specifications or work statements,

etc.) or perform evaluation services which may create a current or subsequent Organizational Conflict of Interest (OCI) as defined in FAR Subpart 9.5 and DFAR Subpart 209.5. The Contractor shall notify the CO immediately whenever he becomes aware that such access or participation may result in any actual or potential OCI and shall promptly submit a plan to the CO to avoid or mitigate any such OCI. The Contractor's mitigation plan will be determined to be acceptable solely at the discretion of the CO and in the event the CO unilaterally determines that any such OCI cannot be satisfactorily avoided or mitigated, the CO may affect other remedies as he or she deems necessary, including prohibiting the Contractor from participation in subsequent contracted requirements which may be affected by the OCI. Neither the contractor nor its on-site employees shall utilize their knowledge of access to information, sensitive or otherwise, for individual or organizational gain.

The guidelines and procedures of FAR 9.5 will be used in identifying and resolving any issues of OCI at the task order level. Regarding OCI issues, orders may incorporate more specific terms and conditions including but not limited to restrictions, in the government's discretion, corresponding to the particular requirements of each order.
All actual or potential OCI situations shall be handled in accordance with FAR Subpart 9.5. "Offeror" as used in this solicitation section addressing OCIs shall include all vendors that the company submitting this proposal has entered into a contractor teaming agreement or prime contractor/subcontractor relationship with any connection to/with its proposal submission for this acquisition.

If the Offeror is currently providing support or anticipates providing support to the Government that presents an actual or potential OCI with the requirements for this acquisition, OR, if the Offeror is currently performing or anticipates performing any other work for the Government under any proposal for any solicitation relating to the requirements for this order, the Offeror shall include in its proposal submission:

a. A statement identifying and describing the actual or potential OCI, and
b. A proposed OCI mitigation plan detailing the offeror's recommendation for how the potential OCI may be avoided, neutralized and/or mitigated.

If the Government determines an OCI cannot be avoided, neutralized, or mitigated, the offeror may be excluded from consideration for award.

In the event this Task Order requires activity that would create an actual or potential conflict of interest:

a. The Contractor shall notify the GSA Contracting Officer of the actual or potential conflict, and not commence work on any task requirement that involves a potential or actual conflict of interest until specifically notified by the GSA Contracting Officer to proceed;

b. The Contractor shall identify the conflict and recommend to the GSA Contracting Officer an alternate tasking approach which would avoid the conflict;

c. If the GSA Contracting Officer determines that it is in the best interest of the Government to issue the Order, notwithstanding a conflict of interest, a request for waiver shall be submitted in accordance with FAR 9.503.

d. Additionally, each contractor employee assigned to this task order shall sign an Organizational Conflict of Interest and Non-Disclosure Statements. (See Attachment "b & e" in PWS Section 10.6) The contractor shall submit the executed Organizational Conflict of Interest Statements through GSA ASSIST Post Award Collaboration Memo for Government Approval.

8.26 Removal of Contractor Employees for Misconduct or Security Reasons:

The Government may, at its sole discretion, direct the contractor to remove any contractor employee from Government facilities for misconduct or security reasons. Such removal does not relieve the contractor of the responsibility to provide sufficient qualified personnel for adequate and timely service. The CO will provide the contractor with an immediate rationale for the removal of any contractor employee.

9.0 Invoices and Payment Information.

9.1 Invoice Submittal.

A copy of the invoice for the task and all Task Items, must be submitted to the GSA ASSIST portal (https://portal.fas.gsa.gov). The Client Representative and GSA Customer Account Manager must approve the invoice in GSA ASSIST portal prior to payment. The payment information must satisfy a three-way match (ASSIST, GSA finance center, and SAM) for the invoice to be successfully processed for payment.

If the contractor submits a revised invoice, the revised invoice must include: 1) a unique invoice number, 2) a brief explanation, and 3) a cross-reference to any previous invoice submittals for tracking purposes and avoiding duplication. Copies of receipts, travel vouchers, etc., that have been completed in accordance with the applicable Government regulations must be attached to the invoice to support charges for other than employee labor hours. Original receipts shall be maintained by the contractor and made available to Government auditors upon request. Reimbursable costs must not exceed the limit(s) specified in the task order. The Government will not pay charges that are not specifically identified in the task and approved, in advance, by the Government. Invoices for final payment must be so identified and submitted when the task has been completed and no further charges are to be billed.

9.2 Payment Schedule.

The contractor shall invoice for work performed the prior month.

9.3 Task Order Closeout.

The contractor shall submit a final invoice and a completed and signed Release of Claims (GSA Form 1142) to the Contracting Officer, within forty-five (45) calendar days after the end of the performance period. After the final invoice has been paid, the contractor shall receive a unilateral modification for task order closeout. Order close-out will be accomplished within the guidelines set forth in FAR Part 4, Administrative Matters, and FAR Pat 42, Contract Administration and Audit Services, specifically utilizing FAR 42.708, Quick-Closeout Procedures

10.0 Definitions, Directives, References, IA Certification and Attachments.

10.1 Definitions:

Contractor. A supplier or vendor awarded a contract to provide specific supplies or service to the government. The term used in this contract refers to the prime.

Contracting Officer. A person with authority to enter into, administer, and or terminate contracts, and make related determinations and findings on behalf of the government. Note: The only individual who can legally bind the government.

Contracting Officer's Representative (COR). An employee of the U.S. Government appointed by the Contracting Officer to administer the contract. Such appointment shall be in writing and shall state the scope of authority and limitations. This individual has authority to provide technical direction to the Contractor as long as that direction is within the scope of the contract, does not constitute a change, and has no funding implications. This individual does NOT have authority to change the terms and conditions of the contract.

Defective Service. A service output that does not meet the standard of performance associated with the Performance Work Statement.

Deliverable. Anything that can be physically delivered, but may include non-manufactured items such as meeting minutes or reports.

Physical Security. Actions that prevent the loss or damage of Government property.

Quality Assurance. The government procedures to verify that services being performed by the Contractor are performed according to acceptable standards.

Quality Assurance Surveillance Plan (QASP). An organized written document specifying the surveillance methodology to be used for surveillance of contractor performance.

Quality Control. All necessary measures taken by the Contractor to assure that the quality of an end product or service shall meet contract requirements.

Subcontractor. One that enters into a contract with a prime contractor. The Government does not have privity of contract with the subcontractor.

Work Day. The number of hours per day the Contractor provides services in accordance with the contract.

Work Week. Monday through Friday, unless specified otherwise.

10.2 Mandatory Directives

DoD Directive 5200.2	DoD Personnel Security Program, 3 April 2017.
DoD Instruction 1000.13	Identification (ID) Cards for Members of the Uniformed Services, Their Dependents, and Other Eligible Individuals
DoD Manual 8570.01-M	Information Assurance (IA) Workforce Improvement Program, 11 November 2015.
DoD Instruction 5230.24	Distribution Statement on Technical Documents, 1 November 2017
OMB M-05-22	Transition Planning for Internet Protocol Version 6 (IPv6), 2 August 2005
FAR Part 45 and DFARS Part 245	Government Property
Executive Order 13526, Classified National Security Information, 29 December 2009 and 32 CFR part 2001 ISOO Implementing Directive 25 June 2010	Marking Classified National Security Information, Revision 4, January 2018

10.3 Guidance Directives

Public Law 93-579	Privacy Act of 1974 (5 USC 522a).
DoD Publication 5200.01-V2, Change 2	DOD Information Security Program: Marking of Classified Information, 19 March 2013
DoD Publication 5200.1-PH-1	Classified Information Nondisclosure Agreement (SF-312), Rev. July 2013.
DoD Regulation 5200.08-R	Physical Security Program, 9 April 2007, Incorporating Change 1, 27 May 2009
DoD Manual 5220.22M	National Industrial Security Program Operating Manual, 28 February 2006, Incorporating Change 2, 18 May 2016.
NIST Pubs 800	NIST Computer Security Publications (https://csrc.nist.gov/publications/).
National Security Agency (NSA)	Media Destruction Guidance https://www.nsa.gov/resources/everyone/media-destruction/
DISA STIGS	Security Technical Implementation Guides (https://iase.disa.mil/stigs/)
Public Law 100-235 (H.R. 145)	The Computer Security Law of 1987, passed into

	Law, 8 January 1988
DoD Guidebook	Guidebook for Contract Property Administration, April 2012
DoD Instruction 5000.64	Accountability and Management of DoD Equipment and Other Accountable Property, 27 April 2017, Change 1 Effective 21 July 2017
DoD Directive 8500.1	Cyber Security, 14 March 2014
DoD Instruction 8510.01	Risk Management Framework (RMF) for DoD Information Technology (IT), 12 March 2014, Incorporating Change 2, 28 July 2017
OMB Circular A-130	Managing Information as a Strategic Resource, 28 July 2016
DoD Directive 8320.1	DoD Data Administration, 26 September 1991, Certified Current as of 21 November 2003
DoD Manual 8320.1-M-1	Data Standardization Procedures, 2 April 1998

10.4 Acronyms.

Acronym	Definition
AASD	Assisted Acquisition Services Division
ACOR	Alternate Contracting Officer's Representative
AE	Acquisition Engineering
AFRL	U.S. Air Force Research Laboratory
AR	Army Regulation
ARL	U.S. Army Research Laboratory
ASSIST	GSA's IT Solutions Shop (web-based order processing system)
C4I	Command, Control, Communications, Computers, and Intelligence
CAC	Common Access Card
CAM	Customer Account Manager
CCM	Computational Biology, Chemistry, and Materials Science
CEA	Computational Electromagnetics and Acoustics
CFAs	Computational Functional Areas
CFD	Computational Fluid Dynamics
CFR	Code of Federal Regulations
CO	Contracting Officer
CONUS	The Contiguous United States; the lower 48 states excluding Alaska and Hawaii
COR	Contracting Officer's Representative
COTS	Commercial Off-the-Shelf
CSM	Computational Structural Mechanics
CWO	Climate/Weather/Ocean Modeling and Simulation

DD254	U.S. Publication referenced in the FAR and DFAR that Provides Security Requirements and Classification Guidance to a Contractor (or sub-contractor).
DDA	Data and Decision Analytics
DFARS	Defense Federal Acquisition Regulation Supplement
DISA	Defense Information Systems Agency
DoD	Department of Defense
DREN	Defense Research and Engineering Network
DSRC	DoD Supercomputing Resource Center
ENS	Computational Electronics, Networking and Systems
EQM	Environmental Quality Modeling and Simulation
ERDC	Engineer Research and Development Center
FAR	Federal Acquisition Regulation
FAS	Federal Acquisition Service
FLC	Facility Security Clearance
FMS	Forces Modeling and Simulation
FPs	Frontier Projects
GFE	Government-Furnished Equipment
GSA	General Services Administration
HPC	High Performance Computing
HPCMP	High Performance Computing Modernization Program
HPDA	High Performance Data Analytics
HW	Hardware
IA	Information Assurance
IATO	Interim Authority to Operate
IMT	Integrated Modeling and Test Environments
IP	Internet Protocol
IPR	In-Progress Review
ISOO	Information Security Oversight Office
IT	Information Technology
IWA	In Accordance With
JTR	Joint Travel Regulations
KMLS	Knowledge Management Learning System
MHPCC	Maui High Performance Computing Center
MPB	Mission Project Board
MPs	Mission Projects
MS	Master of Science Degree
NAC	National Agency Check
NIST	National Institute of Standards and Technology
NLT	No Later Than

NRL	U.S. Naval Research Laboratory
NSA	National Security Agency
NSP	Not Separately Price
OCI	Organization Conflict of Interest
ODC	Other Direct Costs
OMB	Office of Management and Budget
OPM	Office of Personnel Management
PD	Program Director
PET	Productivity Enhancement and Training
PhD	Doctor of Philosophy Degree
PIs	Principal Investigators
PM	Program Manager
PMP	Program Management Plan
POC	Point of Contact
POP	Period of Performance
PWS	Performance Work Statement
QASP	Quality Assurance Surveillance Plan
QCP	Quality Control Plan
RDT&E	Research, Development, Test, and Evaluation
S&T	Science & Technology
SAS	Space and Astrophysical Sciences
SIP	Signal/Image Processing
SPB	Special Project Board
SPs	Special Projects
STIGS	Security Technical Implementation Guides
TD	Technical Directives
T&E	Test & Evaluation
TTAs	Technical Thrust Areas
U.S.	United States
UAG	User Advisory Group
USC	The Code of Laws of the United States of America (aka U.S. Code)
WPAFB	Wright Patterson Air Force Base

10.5 Information Assurance (IA) Certification.

a. Contractors performing IA functions as outlined in DoD 8570.01-M require an Information Assurance Technical (IAT) Level 1 certification within 180 days of date of award of the base period of performance. The personnel filling the positions must obtain and maintain an A+, Network +, System Security Certified Practitioner (SSCP) certification. Contractor personnel

are required to register their certifications at https://www.dmdc.osd.mil/appj/dwc/index.jsp and provide a copy of their certificate to the unit 8570 monitor to be included in the annual reporting.

b. In addition to the baseline IA certification requirement for IAT Level 1, personnel with privileged access must obtain appropriate Computing Environment (CE) certifications for the operating system(s) and/or security related tools/devices they support as required by their employing organization. If supporting multiple tools and devices, an IAT should obtain CE certifications for all the tools and devices they are supporting.

10.6 Attachments.

- **a.** Travel Request & Travel Expense Summary
- **b.** Contractor Non-Disclosure Statement
- **c.** Draft DD254 ID04180146 May 1 2019
- **d.** DFARS 252.209-7999, Representation by Corporations Liability or a Felony conviction under any Federal Law Dated Jan 2012
- **e.** Contractor Conflict of Interest Statement
- **f.** Sample Mission Project for ITO
- **g.** Past Performance Questionnaire ID04180146 Apr 26 2019
- **h.** PET Offerors required Price - Cost Quote format ID04180146 Apr 29 2019

11.0 Federal Acquisition Regulation

11.1 FAR 52.252-2, Clauses Incorporated by Reference (Feb 1998).

This task order incorporates one or more clauses by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. Also, the full text of a clause may be accessed electronically at this address:

https://www.acquisition.gov/far/index.html.

FAR 52.204-2, Security Requirements (Aug. 1996)
FAR 52.204-9, Personal Identity Verification of Contractor Personnel (Jan 2011)
FAR 52.204-18, Commercial and Government Entity Code Maintenance (Jul 2016)
FAR 52.212-4, Contract Terms and Conditions – Commercial Items, Alternate I (Jan 2017)
FAR 52.216-31 Time-and-Materials/Labor-Hour Proposal Requirements—Commercial Item Acquisition (Feb 2007)
FAR 52.224-1, Privacy Act Notification (Apr 1984)
FAR 52.224-2, Privacy Act (Apr 1984)
FAR 52.227-18 Rights in Data – Existing Works (Dec 2007)
FAR 52.227-23 – Rights To Proposal Data (Technical) (JUN 1987) *To be announced* *To be announced*
FAR 52.232-22 Limitation of Funds (Apr 1984).

FAR 52.232-39, Unenforceability of Unauthorized Obligations (Jun 2013)
FAR 52.242-5, Payments to Small Business Subcontractors (Jan 2017)
DFAR 252.201-7000, Contracting Officer's Representative (Dec 1991)
DFAR 252.203-7000, Requirements Relating to Compensation of Former DoD Officials (Sep 2011)
DFAR 252.203-7002, Requirement to Inform Employees of Whistleblower Rights (Sep 2013)
DFAR 252.203-7003, Agency Office of the Inspector General (Dec 2012)
DFAR 252.204-7000, Disclosure of Information (Oct 2016)
DFAR 252.204-7003, Control Of Government Personnel Work Product (Apr 1992)
DFAR 252.204-7005 Oral Attestation of Security Responsibilities (Nov 2001)
DFAR 252.204-7009, Limitations on the Use or Disclosure of Third-Party Contractor Reported Cyber Incident Information (Oct 2016)
DFAR 252.204-7012, Safeguarding Covered Defense Information and Cyber Incident Reporting (Oct 2016)
DFAR 252.204-7015, Notice of Authorized Disclosure of Information for Litigation Support (May 2016)
DFAR 252.205-7000, Provision of Information to Cooperative Agreement Holders (Dec 1991)
DFAR 252.209-7004, Subcontracting with Firms That Are Owned or Controlled by The Government of a Country that is a State Sponsor of Terrorism (Oct 2015)
DFAR 252.211-7003, Item Unique Identification and Valuation (Mar 2016) *(c)(1)(i) NONE* *(ii) NONE* *(iii) NONE* *(iv) NONE*
DFAR 252.211-7007, Reporting of Government-Furnished Property (Aug 2012)
DFAR 252.211-7008, Use of Government-Assigned Serial Numbers (Sep 2010)
DFAR 252.216-7009 Allowability of Legal Costs Incurred in Connection With a Whistleblower Proceeding. (Sep 2013)
DFAR 252.223-7004 Drug-Free Work Force (Sep 1998)
DFAR 252.223-7006, Prohibition on Storage, Treatment, and Disposal of Toxic or Hazardous Materials (Sep 2014)
DFAR 252.225-7012, Preference for Certain Domestic Commodities (Dec 2017)
DFAR 252.225-7048, Export-Controlled Items (Jun 2013)
DFAR 252.226-7001 Utilization of Indian Organizations, Indian-Owned Economic Enterprises, and Native Hawaiian Small Business Concerns (Sep 2004)
DFAR 252.227-7000 Non-Estoppel (Oct 1966)
DFAR 252.227-7013, Rights in Technical Data – Noncommercial Items (Feb 2014)
DFAR 252.227-7014, Rights in Non-commercial Computer Software and Non-commercial Computer Software Documentation (Feb 2014)
DFAR 252.227-7015, Technical Data – Commercial Items (Feb 2014)
DFAR 252.227-7016, Rights in Bid or Proposal Information (Jan 2011)
DFAR 252.227-7025, Limitations on the Use or Disclosure of Government-Furnished Information Marked with Restrictive Legends (May 2013)
DFAR 252.231-7000 Supplemental Cost Principles (Dec 1991)
DFAR 252.232-7010, Levies on Contract Payments (Dec 2006)

DFAR 252.239-7000, Protection Against Compromising Emanations (Jun 2004)
DFAR 252.239-7001, Information Assurance Contractor Training and Certification (Jan 2008)
DFAR 252.239-7018, Supply Chain Risk (Sep 2018) (DEVIATION 2018-O0020)
DFAR 252.243-7001, Pricing of Contract Modifications (Dec 1991)
DFAR 252.243-7002, Requests for Equitable Adjustment (Dec 2012)
DFAR 252.244-7000 Subcontracts for Commercial Items (Jun 2013)
DFAR 252.244-7001 Contractor Purchasing System Administration (May 2014)
DFAR 252.245-7001, Tagging, Labeling, and Marking of Government-Furnished Property (Apr 2012)
DFAR 252.245-7002, Reporting Loss of Government Property (Dec 2017)
DFAR 252.245-7003, Contractor Property Management System Administration (Apr 2012)
DFAR 252.245-7004, Reporting, Reutilization, and Disposal (Dec 2017)
DFAR 252.247-7023, Transportation of Supplies by Sea (Apr 2014)
DFAR 252.251-7000, Ordering From Government Supply Sources (Aug 2012)

11.2 Clauses Incorporated in Full Text.

FAR 52.217-8, Option to Extend Services (Nov 1999).

The Government may require continued performance of any services within the limits and at the rates specified in the contract. These rates may be adjusted only as a result of revisions to prevailing labor rates provided by the Secretary of Labor. The option provision may be exercised more than once, but the total extension of performance hereunder shall not exceed 6 months. The CO may exercise the option by written notice to the Contractor within 30 calendar days of the end of the task order.

(End of Clause)

FAR 52.217-9, Option to Extend the Term of the Contract (Mar 2000).

(a) The Government may extend the term of this contract by written notice to the Contractor within 30 calendar days; provided that the Government gives the Contractor a preliminary written notice of its intent to extend at least 60 calendar days before the contract expires. The preliminary notice does not commit the Government to an extension.

(b) If the Government exercises this option, the extended contract shall be considered to include this option clause.

(c) The total duration of this contract, including the exercise of any options under this clause, shall not exceed 66 months.

(End of Clause)

FAR 52.252-2, Clauses Incorporated by Reference (Feb 1998)

This contract incorporates one or more clauses by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. Also, the full text of a clause may be accessed electronically at this/these address(es): http://farsite.hill.af.mil/

(End of Clause)

DFARS 252.232-7007, Limitation of Government's Obligation (Apr 2014)

(a) Contract line item(s) *[Contracting Officer insert after negotiations]* is/are incrementally funded. For this/these item(s), the sum of $ *[Contracting Officer insert after negotiations]* of the total price is presently available for payment and allotted to this contract. An allotment schedule is set forth in paragraph (j) of this clause.

(b) For item(s) identified in paragraph (a) of this clause, the Contractor agrees to perform up to the point at which the total amount payable by the Government, including reimbursement in the event of termination of those item(s) for the Government's convenience, approximates the total amount currently allotted to the contract. The Contractor is not authorized to continue work on those item(s) beyond that point. The Government will not be obligated in any event to reimburse the Contractor in excess of the amount allotted to the contract for those item(s) regardless of anything to the contrary in the clause entitled "Termination for Convenience of the Government." As used in this clause, the total amount payable by the Government in the event of termination of applicable contract line item(s) for convenience includes costs, profit, and estimated termination settlement costs for those item(s).

(c) Notwithstanding the dates specified in the allotment schedule in paragraph (j) of this clause, the Contractor will notify the Contracting Officer in writing at least ninety days prior to the date when, in the Contractor's best judgment, the work will reach the point at which the total amount payable by the Government, including any cost for termination for convenience, will approximate 85 percent of the total amount then allotted to the contract for performance of the applicable item(s). The notification will state (1) the estimated date when that point will be reached and (2) an estimate of additional funding, if any, needed to continue performance of applicable line items up to the next scheduled date for allotment of funds identified in paragraph (j) of this clause, or to a mutually agreed upon substitute date. The notification will also advise the Contracting Officer of the estimated amount of additional funds that will be required for the timely performance of the item(s) funded pursuant to this clause, for a subsequent period as may be specified in the allotment schedule in paragraph (j) of this clause or otherwise agreed to by the parties. If after such notification additional funds are not allotted by the date identified in the Contractor's notification, or by an agreed substitute date, the Contracting Officer will terminate any item(s) for which additional funds have not been allotted, pursuant to the clause of this contract entitled "Termination for Convenience of the Government."

(d) When additional funds are allotted for continued performance of the contract line item(s) identified in paragraph (a) of this clause, the parties will agree as to the period of contract performance which will be covered by the funds. The provisions of paragraphs (b) through (d) of this clause will apply in like manner to the additional allotted funds and agreed substitute date, and the contract will be modified accordingly.

(e) If, solely by reason of failure of the Government to allot additional funds, by the dates indicated below, in amounts sufficient for timely performance of the contract line item(s) identified in paragraph (a) of this clause, the Contractor incurs additional costs or is delayed in the performance of the work under this contract and if additional funds are allotted, an equitable adjustment will be made in the price or prices (including appropriate target, billing, and ceiling prices where applicable) of the item(s), or in the time of delivery, or both. Failure to agree to any such equitable adjustment hereunder will be a dispute concerning a question of fact within the meaning of the clause entitled "Disputes."

(f) The Government may at any time prior to termination allot additional funds for the performance of the contract line item(s) identified in paragraph (a) of this clause.

(g) The termination provisions of this clause do not limit the rights of the Government under the clause entitled "Default." The provisions of this clause are limited to the work and allotment of funds for the contract line item(s) set forth in paragraph (a) of this clause. This clause no longer applies once the contract is fully funded except with regard to the rights or obligations of the parties concerning equitable adjustments negotiated under paragraphs (d) and (e) of this clause.

(h) Nothing in this clause affects the right of the Government to terminate this contract pursuant to the clause of this contract entitled "Termination for Convenience of the Government."

(i) Nothing in this clause shall be construed as authorization of voluntary services whose acceptance is otherwise prohibited under 31 U.S.C. 1342.

(j) The parties contemplate that the Government will allot funds to this contract in accordance with the following schedule:

On execution of contract	$ _____
(month) (day), (year)	$ _____
(month) (day), (year)	$ _____
(month) (day), (year)	$ _____

(End of clause)

11.3 Incremental Funding.

The project may be incrementally funded. If incrementally funded, funds shall be added to the contract/order via a unilateral modification as the funds become available. The contractor shall not perform work resulting in charges to the Government that exceed obligated funds.

The contractor shall notify the Contracting Officer in writing whenever it has reason to believe that the costs it expects to incur under this contract in the next sixty (60) days, when added to all costs previously incurred, will exceed **75 percent** of the total amount so far allotted to the contract/order by the Government. The notice shall state the estimated amount of additional funds required to continue performance of the contract/order for the specified period of performance or completion that task.

Sixty days (60) before the end of the period specified in the Schedule, the contractor shall notify the Contracting Officer in writing of the estimated amount of additional funds, if any, required to continue timely performance under the contract or for any further period specified in the Schedule or otherwise agreed upon, and when the funds will be required.

The Government is not obligated to reimburse the contractor for charges in excess of the contract/order funded amount and the contractor is not obligated to continue performance or otherwise incur costs that could result in charges to the Government in excess of the obligated amount under the contract/order.

Appendix A
CLIN Estimated Workload per Year and Special Cost

Workload Projection: This projection is the Government's estimated overall annual workload based (Contractor and Subcontractor) for the CLIN requirements in this work statement, and is not intended to be binding on either party or to be the only possible solution. It is based on historical and future needs to sustain the HPCMP and its Supporting Commands technical programs, projects and systems. This is a performance-based acquisition; therefore, offers may vary with respect to the labor mix (i.e. labor categories/skill levels) and the level of effort quoted. Direct Labor Categories can be broken down into skill levels (i.e. Entry Level, Journeyman, Senior, and Subject Matter Expert). However, an offeror whose quote significantly deviates at the Task Order level (10% greater or lower of the total estimated hours) from this overall workload projection shall provide a rationale in its quote for the significant deviation. For this Task Order, One (1) Full Time Equivalent (FTE) is equal to 1920 hours per year.

Labor categories in the 900 series are not defined in Alliant 2 Labor Categories IAW Section B – Supplies or Services and Prices/Costs of the GSA Alliant 2 Unrestricted GWAC paragraph B.6.1.2 of the Conformed Contract for Alliant 2. Definitions of possible Labor Categories needed for the 900 series can be found in Appendix D of this PWS.

Option Years 2, 3 and 4 hours are exactly the same as Option Year 1 hours. The 6 month extension is exactly half the number of hours of Option Year 4 hours. For example if OY 1 is 3,840 hours then OY 2 is 3,840 hours, OY 3 is 3,840 hours, OY 4 is 3,840 hours and the 6 month extension is 1,920 hours. This applies to all labor categories in CLINs 0005, 0015, 0020, 0025, 0030, 0035, 0040, 0045 and 0050.

CLIN /Contract Type	Alliant2 Labor Category (Skill Level)	FTE	Base Hours	OY1 Hours
0005/ FFP Program Management Support				
124 / Computer and Information Systems Manager (SME)		**2.0**	**3,200**	**3,840**
0005 / Program Management Support Total		**2.0**	**3,200**	**3,840**

0010 / Program Management Support Travel (see ODC, SP and Travel Below)

0015 / LH ERDC TTA Labor	FTE	Base Hours	OY1 Hours
Cross-cutting Computational Areas			
902 / Computational Scientist/Engineer (Journeyman)	**4.0**	**6,400**	**7,680**
903 / Computational Scientist/Engineer (Senior)	**1.0**	**1,600**	**1,920**
904 / Computational Scientist/Engineer (SME)	**1.0**	**1,600**	**1,920**
Cross-cutting Computational Areas Total	**6.0**	**9,600**	**11,520**

Software Refactoring			
903 / Computational Scientist/Engineer (Senior)	**2.0**	**3,200**	**3,840**
Software Refactoring Total	**2.0**	**3,200**	**3,840**
0015 / ERDC TTA Labor Total	**8.0**	**12,800**	**15,360**

0020 / LH AFRL TTA Labor	**FTE**	**Base Hours**	**OY1 Hours**
Cross-cutting Computational Areas			
902 / Computational Scientist/Engineer (Journeyman)	**2.0**	**3,200**	**3,840**
903 / Computational Scientist/Engineer (Senior)	**1.0**	**1,600**	**1,920**
904 / Computational Scientist/Engineer (SME)	**1.0**	**1,600**	**1,920**
Cross-cutting Computational Areas Total	**4.0**	**6,400**	**7,680**
Programing Environments			
902 / Computational Scientist/Engineer (Journeyman)	**1.0**	**1,600**	**1,920**
903 / Computational Scientist/Engineer (Senior)	**1.0**	**1,600**	**1,920**
Programing Environments Total	**2.0**	**3,200**	**3,840**
0020 / AFRL TTA Labor Total	**6.0**	**9,600**	**11,520**

0025/ LH ARL TTA Labor	**FTE**	**Base Hours**	**OY1 Hours**
Cross-cutting Computational Areas			
902 / Computational Scientist/Engineer (Journeyman)	**4.0**	**6,400**	**7,680**
903 / Computational Scientist/Engineer (Senior)	**3.0**	**4,800**	**5,760**
904 / Computational Scientist/Engineer (SME)	**1.0**	**1,600**	**1,920**
Cross-cutting Computational Areas Total	**8.0**	**12,800**	**15,360**
0025/ / ARL TTA Labor Total	**8.0**	**12,800**	**15,360**

0030/ LH Navy TTA Labor	**FTE**	**Base Hours**	**OY1 Hours**
Cross-cutting Computational Areas			
903 / Computational Scientist/Engineer (Senior)	**1.0**	**1,600**	**1,920**

904 / Computational Scientist/Engineer (SME)	1.0	1,600	1,920
Cross-cutting Computational Areas Total	2.0	3,200	3,840
HP I/O Storage			
902 / Computational Scientist/Engineer (Journeyman)	1.0	1,600	1,920
903 / Computational Scientist/Engineer (Senior)	1.0	1,600	1,920
HP I/O Storage Total	2.0	3,200	3,840
0030 / Navy TTA Labor Total	4.0	6,400	7,680

0035 / LH NRL-DC TTA Labor	FTE	Base Hours	OY1 Hours
Cross-cutting Computational Areas			
902 / Computational Scientist/Engineer (Journeyman)	1.0	1,600	1,920
903 / Computational Scientist/Engineer (Senior)	2.0	3,200	3,840
Cross-cutting Computational Areas Total	3.0	4,800	5,760
0035 / NRL-DC TTA Labor Total	3.0	4,800	5,760

0040 / LH Option - Maui TTA Labor	FTE	Base Hours	OY1 Hours
Cross-cutting Computational Areas			
902 / Computational Scientist/Engineer (Journeyman)	1.0	1,600	1,920
Cross-cutting Computational Areas Total	1.0	1,600	1,920
0040 / Option - Maui TTA Labor Total	1.0	1,600	1,920

0045 / LH Training and Technology Transfer Labor	FTE	Base Hours	OY1 Hours
283 / Information Technology Project Manager (Senior)	1.0	1,600	1,920
373 / Training and Development Specialist (Senior)	1.0	1,600	1,920
372 / Training and Development Specialist (Journeyman)	1.0	1,600	1,920
0045/ Training and Technology Transfer Labor Total	3.0	4,800	5,760

0050 / LH Outreach Labor	FTE	Base Hours	OY1 Hours
343 / Technical Writer (Senior)	1.0	1,600	1,920
0050 / Outreach Labor Total	1.0	1,600	1,920

Other Direct Costs (ODC), Special Projects (SP), and Travel Budget Projections: This chart shows the Government's estimated overall Not to Exceed (NTE) Travel Budget and is an overall estimate for both Contractor and Subcontractors. Offerors may vary the Travel Cost between the Contractor and Subcontractors for each CLIN. The Travel Budget Projections are provided for the Pricing Template. Only the Base year budgets are listed. The six (6) Month Extension will be half of the OY4 amounts. **All CAF billing will be funded and paid commutatively under the Alliant 2 Contract Access Fees (CAF) CLINs for each contract year.**

Travel, ODC, CAF and Mission /Special Project Not to Exceed (NTE) Budgets:

0010 / Cost Reimbursement Program Management Support Travel Total:	$293,594.51
Base Year Travel:	$50,000.00
Option Year 1 Travel:	$51,500.00
Option Year 2 Travel:	$53,045.00
Option Year 3 Travel:	$54,636.35
Option Year 4 Travel:	$56,275.44
Six Month Extension (if required):	$28,137.72

0055 / Cost Reimbursement Travel Total:	$1,174,378.04
Base Year:	$200,000.00
Option Year 1:	$206,000.00
Option Year 2:	$212,180.00
Option Year 3:	$218,545.40
Option Year 4:	$225,101.76
Six Month Extension (if required):	$112,550.88

0060 / Cost Reimbursement ODCs Total:	$587,189.02
Base Year:	$100,000.00
Option Year 1:	$103,000.00
Option Year 2:	$106,090.00
Option Year 3:	$109,272.70
Option Year 4:	$112,550.88
Six Month Extension (if required):	$56,275.44

0099 / Alliant 2 Access Fee (CR)	**Max Billing per Year**	**$100,000.00**
0099	BP Alliant 2 Access Fee @ 0.75% or $100K or whichever is less	
0199	OY1 Alliant 2 Access Fee @ 0.75% or $100K or whichever is less	
0299	OY2 Alliant 2 Access Fee @ 0.75% or $100K or whichever is less	
0399	OY3 Alliant 2 Access Fee @ 0.75% or $100K or whichever is less	
0499	OY4 Alliant 2 Access Fee @ 0.75% or $100K or whichever is less	
0599	EXT Alliant 2 Access Fee @ 0.75% or $100K or whichever is less	

1000 / T&M	**Base Year Special Projects:**	**$5,000,000**
2000 / T&M	**Option Year 1 Special Projects:**	**$5,096,500**
3000 / T&M	**Option Year 2 Special Projects:**	**$5,194,862**
4000 / T&M	**Option Year 3 Special Projects:**	**$5,295,123**
5000 / T&M	**Option Year 4 Special Projects:**	**$5,397,319**
6000 / T&M Six Month Extension (if required) Special Projects:		**$2,698,659**

Appendix B:
Mission / Special Project Technical Requirements Form

TD and Task Item Numbers Name of Mission / Special Project:	Client Rep: Phone: Email:

Period of Performance	As required.
Description of Effort	Describe the Technical Mission or Special Project Requirements to communicate to the Contractor exactly what work is required for this Technical Directive. Provide enough information that an offeror/contractor can develop a reasonable Technical Plan for each Mission Project or Special Project TD as described in PWS Sections 3.1.2 & 3.4 The information in this section will also allow the contractor to provide a reasonable estimated cost estimate in accordance with PWS Section 8.0.1 and Sub-sections 8.0.2 to 8.0.4 Check List: •TD identification number and Item Number. •Applicable task order performance work statement paragraph. •Applicable task order period of performance. •Deliverable and critical milestones, as applicable. •Requesting Government activity. •Detailed description of the service(s) to be performed including any travel and materials required. •Estimated completion date (based on an estimated start date) •Cost estimate that includes a TD technical plan and estimated contractor cost, with a breakout of Alliant labor categories, hours, travel, IT Support requirements as applicable. •Each TD quote or cost estimate shall also include: Government Furnished Equipment (GFE), if applicable. Government Furnished Information (GFI), if applicable. Alliant 2 Contract Access Fee (CAF) applied to the Total Estimated Contractor Cost. •For all Special projects that require Security Classification, the technical description and requirement will be provided by the COR or ACOR in a proper a secured location, but not in the GSA PWS or contract file. All TD cost and technical description will be listed as UNCLASSIFIED in GSA Contractor Information System such as AASBS.
Other project information as required.	Additional Space can be used if required.

Appendix C: Special Project Cost Estimate Template

TD and Task Item Numbers:	Client Rep: To Be Announced			
Project Title:				
1. Direct Labor & CLIN	**Estimated Hours**	**Rate per hour ($)**	**Estimated Cost ($)**	**Total Estimated Cost ($)**
Add more Rows if needed				
Total Hours	0.0			
			Total Direct Labor:	$0.00
2. Materials/Services (Excluding IT)			**Estimated cost ($)**	**Total with IRM at 1.5%**
List any Electrical and Mechanical Parts & fabrication and associated cabling and spare parts.			$0.00	$0.00
3. Information Technology Support			**Estimated cost ($)**	**Total with IRM at 1.5%**
List any Computers, servers, software, networking, system installation support hardware needed			$0.00	$0.00
4. Travel			**Estimated cost ($)**	**Total with IRM at 1.5%**
Contractor Travel			$0.00	$0.00
5. Subcontractor (s) Consultants (s) & Sub Travel			**Estimated cost ($)**	**Total Estimated Cost ($)**
Subcontractor and Travel information.			$0.00	$0.00
			Other Direct Costs(ODC) Totals:	$0.00
6. Total Contractor Cost before Contract Access Fee				$0.00
			Alliant 2 Contract Access Fee:	$0.00
7. Total Contractor Cost with Alliant 2 Contract Access Fee (CAF)				$0.00

See: The file name of this template is "PET Offerors required Price - Cost Quote format ID04180146 Apr 26 2019" See Tab: "Mission Project Estimate".

Note: All CAF billing will be funded and paid commutatively under the CAF CLINs for each contract year. (See App. A.)

Appendix D

Delivery of TTA Support Requirements in terms of CFA Technical Areas

Appendix D describes the expertise needed to support the TTAs in terms of CFAs. A description of the typical software used and scope of work of these technical areas is contained in the following sections. The CFAs may include, but are not limited, to these areas.

Computational Biology, Chemistry, and Materials Science (CCM)

CCM comprises three computational disciplines with different levels of activity in the user community. Most of the CCM activity has been centered on atomistic computational chemistry and materials codes for modeling and development of insensitive munitions, novel metal alloys, polymers, complex materials, semiconductors, and other innovations. Computational biology is a relatively less active area in the DoD focusing on biochemical/biomolecular modeling for bio- and chemical warfare (BW/CW) and medical applications. Specifically, the Contractor shall:

- Work with HPCMP users to identify needs and define requirements for multiscale/multiphysics modeling techniques for advanced materials, metal alloy applications, high-explosive applications, and applications combining atomistic, microstructure, and mesoscale finite element modeling (FEM) codes. Identify and develop promising algorithms for scalable codes to address materials, chemicals, and biological research of interest to the DoD. Seek advanced methods for data analysis. Additionally, the Contractor will identify needs and emerging requirements for biochemical and biomolecular modeling methods for chemical/biological agents and force protection countermeasures.
- Provide application-level support for major computational chemistry codes including but not limited to GAMESS, LAMMPS, CP2K, CPMD, NWCHEM, GAUSSIAN, Quantum Espresso, VASP, other quantum-mechanical based codes and molecular dynamics codes, and biological informatics pipelines.
- Provide technical support to CCM customers/users for existing and emerging software in terms of usability, performance optimization, validation/verification and strong/weak scaling.
- Foster and develop collaborative relationships with academic and DoD communities.

Computational Fluid Dynamics (CFD)

CFD has the largest number of HPCMP users, by a factor of 3. Most multidisciplinary activities involve CFD in some way, whether Fluid-Structure Interactions (CFD + Computational Structural Mechanics [CSM] = FSI) or as the driving force in a multidisciplinary project (e.g., CREATE-AV, CREATE-Ships). Specifically, the Contractor shall:

- Work with HPCMP users to identify needs and define requirements for verification and validation (V&V), moving body problems, complex physics (chemical reactions in flows), mesh generation techniques/ codes and optimization/parallelization of codes
- Provide application level support for major CFD codes, including but not limited to FUN3D, US3D, OVERFLOW, Capstone-MG, Kestrel, Helios, DYSMAS, BUB3D, ADVED-NS, ANSYS Fluent, STAR-CCM+, CFD++, SUGGAR, DiRTLiB, libmo, and UGLIB.
- Provide technical support to CFD customers/users for emerging software in terms of usability, performance optimization, validation/verification and strong/weak scaling.
- Foster and develop collaborative relationships with DoD and non-DoD communities.

Computational Structural Mechanics (CSM)

CSM is the third largest computational area in terms of users. CSM codes are frequently coupled with CFD or CCM codes in multidisciplinary applications. For the DoD, CSM predicts material and structural response of armor, aircraft, ships, and force protection (buildings and structures). Specifically, the Contractor shall:

- Work with HPCMP users to identify needs and define requirements for air vehicle survivability; analysis of coupled thermal/structural/acoustic problems; numerical tools for multiscale modeling; V&V; integration of advanced material models; and computational support for blast/fragmentation/structure interaction
- Provide application-level support for major CSM codes, including but not limited to ALE3D, ABAQUS, ANSYS, CTH, EPIC, LS-DYNA, Sierra Mechanics and PATRAN
- Provide technical support to CSM customers/users for existing and emerging software in terms of usability, performance optimization, validation/verification and strong/weak scaling.
- Foster and develop collaborative relationships with DoD and non-DoD communities.

Climate/Weather/Ocean Modeling and Simulation (CWO)

CWO physics, models, and codes are mature and established, and are used by multiple DoD customers and programs. Examples of CWO applications include the Regional Arctic Simulation Model (RASM) and the Earth System Modeling Framework (ESMF). Specifically, the Contractor shall:

- Provide application-level support for major CWO codes, including but not limited to the Navy Aerosol Analysis and Prediction System (NAAPS), the Coupled Ocean/Atmospheric Mesoscale Prediction System (COAMPS), the Navy Global

Environment Model (NAVGEM), the Hybrid Coordinate Ocean Model (HYCOM), the Simulating WAves Nearshore (SWAN) model, WAVEWATCH III, RASM, Community Ice CodE (CICE), the Weather Research and Forecasting (WRF) model, and data assimilation applications (e.g., NCODA and NAVDAS). Support for the new weather prediction model NEPTUNE, using a nonhydrostatic deep atmosphere equation set with 3-D spectral element spatial discretization, which is expected to replace NAVGEM in the future, is also required.

- Provide technical support to CWO customers/users for existing and emerging software in terms of usability, performance optimization, validation/verification and strong/weak scaling.
- Foster and develop collaborative relationships with DoD and non-DoD communities

Computational Electronics, Networking and Systems/C4I (ENS)

ENS includes electronics devices and military networks and systems that provide Command, Control, Communications, Computers, and Intelligence (C4I) on the battlefield. A major challenge for ENS is developing or combining codes that accurately represent mobile *ad hoc* networks (MANET) in a battlefield environment. No current commercial or academic code completely fills these requirements. ENS also includes modeling and simulation capabilities for advanced solid-state materials and devices, such as photonic bandgap material (PBM), spin transport electronics ("spintronics") in magnetic semiconductors, optoelectronic devices, and ionic transport through nano-structures. New challenges have emerged in the use of neuromorphic processors that present unsolved challenges in programmability and application to DoD problems where cognitive models of computing have the potential for significant advances. Contractor will support investigation of DoD applications of such technologies, including optical communications and sensing, high-power RF communications components, and chemical/biological sensors. Specifically, the Contractor shall:

- Work with HPCMP users to identify needs and define requirements for simulation tools for photonic devices; IA and cyber-operations; and information management infrastructure, modeling, and simulation of MANETs
- Work with HPCMP users to define needs and requirements for computationally efficient solvers and codes for specialized problems such as (1) EM propagation through crystal lattice structures, (2) larger scale optoelectronic circuits and devices, (3) device response to optical, electrical, and thermal stress, and (4) non-equilibrium methods for modeling nano-channel electron transport.
- Provide application-level support for major ENS codes, including but not limited to QualNet, OpNet, PDNS, NS-2, and NS-3, and the 3D parallel ADI-FDTD code at SPAWAR and the Cellular Monte-Carlo code at AFRL.
- Provide technical support to ENS customers/users for existing and emerging software in terms of usability, performance optimization, validation/verification and strong/weak scaling.

- Foster and develop collaborative relationships with DoD and non-DoD communities.

Environmental Quality Modeling and Simulation (EQM)

EQM supports investigations of the DoD's impact on the environment and the impact of the environment on the DoD mission and the general public. EQM applications range from military battlespace to civilian public works projects. Simulation-based decision-making in this arena requires high-fidelity modeling of geophysical fluid flows, geomechanics, and multi-constituent fate and transport occurring at multiple spatial and temporal scales through coupled atmospheric/surface/subsurface environments. Specifically, the Contractor shall:

- Work with HPCMP users to identify needs and define requirements for better solvers, unstructured grid flow and transport models, and automated parameter estimation and sensitivity schemes (V&V)
- Provide application level support for major EQM codes including but not limited to ADH, ADCIRC, CE-QUAL-ICM, and STWAVE
- Provide technical support to EQM customers/users for existing and emerging software in terms of usability, performance optimization, validation/verification and strong/weak scaling.
- Foster and develop collaborative relationships with DoD and non-DoD communities.

Forces Modeling and Simulation (FMS)

FMS currently has the smallest number of HPCMP users. This computational area supports increased use of HPC resources to improve the usability, functionality, and relevance of FMS codes to the analytical, R&D, and academic communities to support the warfighter in executing DoD missions. PET has made progress in migrating major FMS users to interactive HPC use in recent years, but outreach remains a key element. Specifically, the Contractor shall:

- Support war-gaming activities and data analysis, provide parallel analysis tools for gaming, and apply HPC results from other computational disciplines to games
- Work with HPCMP users to identify needs and define requirements for scalable and distributed computational environment, data mining of user data generated from HPC events, and visualization of dynamic events (interactions with IMT and Enabling Technologies [ET])
- Provide application-level support for major FMS codes including but not limited to EADSIM, JIMM, Suppressor, Thunder, OneSAF, and Pythagoras
- Provide technical support to FMS customers/users for existing and emerging software in terms of usability, performance optimization, validation/verification and strong/weak scaling.
- Foster and develop collaborative relationships with DoD and non-DoD communities.

Integrated Modeling and Test Environments (IMT)

IMT deals with the collection, storage, processing, and analysis of test data, and models for verifying, synthesizing, directing, and understanding test results. Users in this computational area frequently interacts with software supplied from other computational area, depending on the type of test being undertaken. Specifically, the Contractor shall:

- Support development testing activities and data analysis; provide parallel analysis tools for development, test, and evaluation (DT&E); and apply HPC results from other computational areas to tests. This includes the following: working with HPCMP users to identify needs and define requirements for live, hardware-in-the-loop, and human-in-the-loop testing and evaluation of DoD weapons, components and systems; the ability to store, share, and mine large and diverse test data sets; and the use of HPC resources in an interactive manner as part of a larger simulation or exercise
- Provide application-level support for user codes applied to IMT, which are primarily from other computational disciplines
- Provide technical support to IMT customers/users for existing and emerging software in terms of usability, performance optimization, validation/verification and strong/weak scaling.
- Foster and develop collaborative relationships with DoD and non-DoD communities.

Space and Astrophysical Sciences (SAS)

Space & Astrophysical Sciences (SAS) research and development advances understanding, specification and prediction of the Earth's atmospheric and space domains to exploit the extended operational environment for military advantage and to minimize environmental impacts on military operations. The SAS computational area embodies the use of mathematics and computational science in the analysis, design, identification, modeling and simulation of the space and near-space environment, including all objects therein, whether artificial or natural. Specifically, the Contractor shall:

- Provide support for the development of software to interegate the atmospheres of the Sun and the Earth, including solar activity and its effects on the Earth's atmosphere, ionosphere and near-Earth space, and the unique physics and properties of celestial sources.
- Foster use of an extensive array of physical and empirical models and analysis tools to integrate observations and theoretical understanding, for ever-improving Department of Defense (DoD) enterprises within, and exploitation of, the extended operational environment.
- Provide strengths of a broad range of physical sciences - atomic and molecular physics, materials science, plasma physics, applied optics, radiation survivability, electronic warfare, directed energy technology, astronautics and space propulsion, orbital

mechanics, space situational awareness, and remote sensing – for inclusion into a structure that helps the DoD multiply force combat effectiveness
- Provide technical support to SAS customers/users for existing and emerging software in terms of usability, performance optimization, validation/verification and strong/weak scaling.
- Foster and develop collaborative relationships with DoD and non-DoD communities.

Signal/Image Processing (SIP)

SIP enables the extraction and analysis of key information from various sensor outputs in both real time (for operational decisions) and post-processing (e.g., forensics for intelligence and mission planning). Sensors include sonar, radar, visible and infrared images, and signal intelligence and navigation assets. Uses include intelligence, surveillance, and reconnaissance (ISR); avionics; communications; smart munitions; forensics; design and analysis; speech and character recognition; and electronic warfare. Functions include detecting, tracking, classifying, and recognizing targets in the midst of noise and jamming; generating high-resolution low-noise imagery; and compressing imagery for communications and storage. Specifically, the Contractor shall:

- Work with HPCMP users to identify needs and define requirements for effective sensing, running computationally intensive SIP algorithms on HPC, access to nontraditional languages on HPC (e.g., MATLAB or Python), data-intensive SIP code infrastructure, sharing and mining SIP data, and remote SIP visualization
- Provide software engineering support to help transition software from one language to another for reasons of efficiency and portability—particularly support for advanced architectures, multicore optimization, blade cell processor and graphical processing systems, and special integrated circuits
- Provide application level support for major SIP productivity tools including but not limited to SSH Toolbox, MATLAB, Octave, Python, and parallel MATLAB solutions such as the Parallel Computing Toolbox (PCT) and bcMPI.
- Provide technical support to SIP customers/users for existing and emerging software in terms of usability, performance optimization, validation/verification and strong/weak scaling.
- Foster and develop collaborative relationships with DoD and non-DoD communities.

Data and Decision Analytics (DDA)

DDA covers the entire computational ecosystem (hardware, software, storage, and networks) required to conduct large-scale data analytics. This ecosystem includes how large data is managed, analyzed, and visualized. Capabilities include methods for conducting exploration (what does the data look like?), descriptive (what happened?), diagnostics (why did it happen?), predictive (what will happen?), and prescriptive (how can we make it happen?) analyses. In this computational area, the Contractor shall:

- Work with the HPCMP user base to identify requirements for software and hardware in the area of DDA
- Provide software engineering support for development and improvement of DDA codes
- Provide expert support for the R programming language and R studio
- Provide application level support for DDA tools including but not limited to Caffe, Tensorflow, Sparc, python, anaconda H2O, and container technologies
- Provide technical support to DDA users/customers across DoD
- Foster and develop collaborations with DoD and non-HPCMP user and customers.
- Identify opportunities, requirements and promising research approaches to exploit and leverage promising data science capabilities. Potential areas include:
    - Cognitive modeling
    - Automated Target Recognition (ATR) (e.g., DARPA Trace program)
    - Test range and training center data streams
    - Autonomy - Supervised and unsupervised machine learning methods
    - High-throughput screening
    - Automated fitting and multiscale approaches
    - Intrusion-resilient cyber systems and cyber vulnerability assessments and reactions
    - Decision-support systems and augmentation of human performance
    - Utilization of relational databases, non-relational databases, polystores and other data management methodologies
- Implement algorithmic cores and new work-stream tools and collaborate with PET on-sites to promote the adoption of HPDA within the HPCMP community.
- Provide leadership to identify, explore and evaluate data science software tools for inclusion within the HPCMP software stack and user community.
- Collaborate with the HPCMP and Centers team to determine when traditional HPC hardware and middleware is appropriate for HPDA problems and tools. Alternatively, provide guidance if and when specialized hardware, middleware, or system configurations would be more optimal.
- Provide technical support to SIP customers/users for existing and emerging software in terms of usability, performance optimization, validation/verification and strong/weak scaling.
- Foster and develop collaborative relationships with DoD and non-DoD communities.

Computational Electromagnetics and Acoustics (CEA)

The CEA functional area is a combination of computational electromagnetics (EM) and computational acoustics. The former has many important applications, including radar signatures, EM propagation, high-power microwave weapons, and battlefield antennas. The latter is critical to protecting submarines from enemy detection methods and seismic detection of underground structures (UGS). Specifically, the Contractor shall:

- Work with HPCMP users to identify needs and define requirements for Radar Cross-Section (RCS) variation due to imperfect geometrical data collection and sparsification of geometrical points; acoustic signatures; seismic/acoustic modeling for UGS applications; and photonic crystals.
- Provide application-level support for major CEA codes including but not limited to SENTRI, Capstone, ICEPIC, XPATCH, ACAD, ILANS, NEC, AERO, AERO-S and STARS3D. Also, provide support to the Electromagnetic Codes Consortium (EMCC).
- Provide technical support to CEA customers/users for existing and emerging software in terms of usability, performance optimization, validation/verification and strong/weak scaling.
- Foster and develop collaborative relationships with DoD and non-DoD communities.

Other Assistance

The Contractor shall provide other consultation and assistance as needed on the use of HPC, platform recommendations, sources of code, and other relevant topics.

Appendix E

List of Past Modification Actions

Mod #	Date	Description of Modification Action